The Honest Guide to Short-Term Stock Trading Strategies

Discover the Short-Term Strategies that have Historically Outperformed the Market.

By

Llewelyn James

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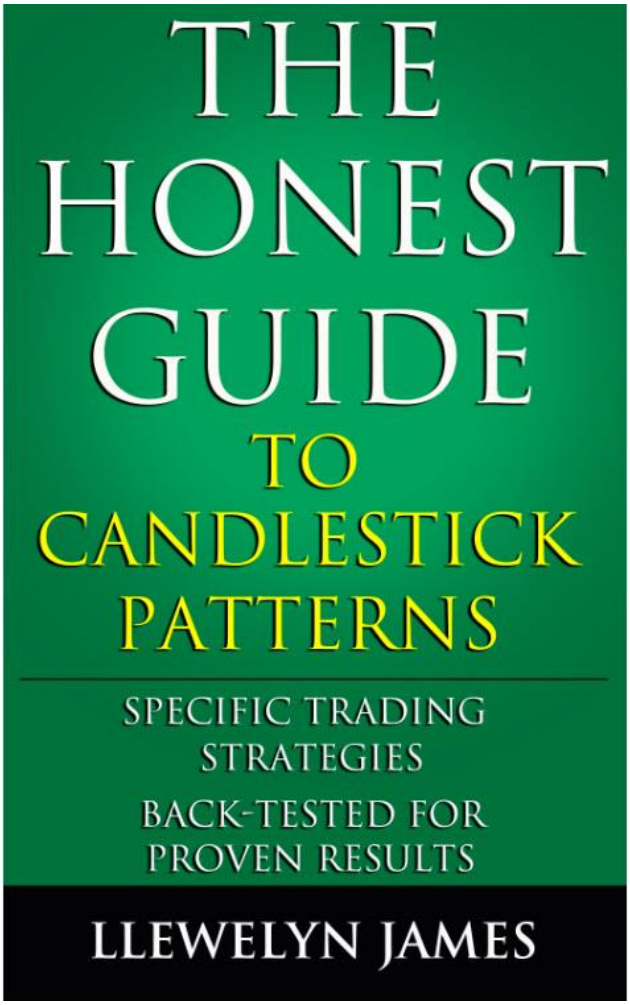
Also by Llewelyn James



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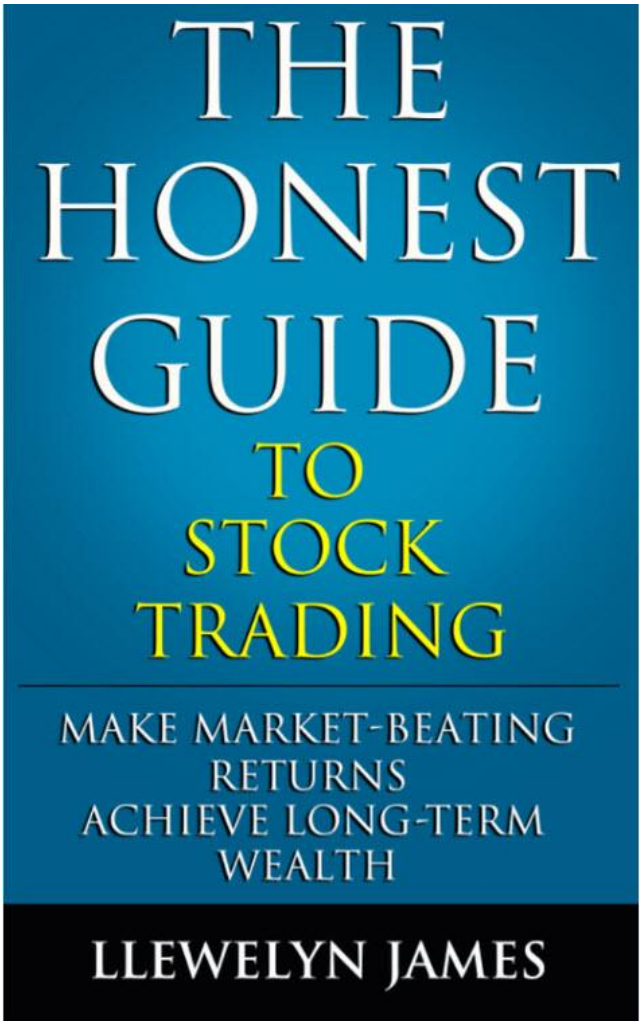

The Honest Guide to Stock Trading

Make Market-Beating Returns. Achieve Long-Term Wealth.

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Introduction

If the feedback of my first two books (don't worry, I won't be mentioning them again) has taught me anything, it's that people value straight talking and honest advice about trading strategies and active investing.

I've also learnt that many readers are far more interested in shorter-term strategies (1 to 5 days holding period) than they are longer-term.

This is somewhat of a problem because although shorter-term strategies are frequently written about in various internet articles and magazines, they are rarely quantified or presented with historical performance metrics.

As somebody who programs strategies for clients, I'm in the fortunate position to have been introduced to 100's of different trading strategies that have been discovered in books, internet articles and seminars.

And perhaps unsurprisingly, 90% or more of the strategies that I program and test for my clients turn out to be complete garbage.

If you're already able to program strategies yourself, you'll no doubt already know that most trading strategies that are found in forums, blogs, books and seminars simply don't work if tested on a reasonably sized database of stocks.

But many of you are too busy to spend your time sifting through the endless amount of trading education which is available, and even if you do have the time, you might not be able to program a strategy and test to see whether it has ever actually worked.

To help bridge this gap, this book will present you with a number of short-term quantitative trading strategies that have a high win-rate and that have historically beaten the market.

Importantly, **the strategies that I write about in this book will include the exact rules and will be backed up with years of statistical evidence.**

Everything which I explain will be quantified and there will be clarity to each of the strategies and corresponding performance data.

Finally, I get a very high volume of emails from people who know that they should have a more mechanical method for scanning the stock market – but they don't know where to start.

If that's you, Part 6 of this book will provide a step by step guide to scanning the stock market each evening and learning how to discover those opportunities for yourself.

And don't worry, the software which I will be using (ProRealTime), offers free end of day data – so you don't need to worry about subscribing to any signal services or buying any new software.

Upon completion of the book, you will be able to make a single button press, and in doing so be able to scan the entire stock market for technical trading signals which have historically preceded profitable short-term trades.

How this book is structured

Part 1 will explain the methodology which I will use when testing or creating the strategies.

I will explain why I use daily stock market data, why I only consider liquid stocks as tradable candidates and why it is important to test strategies on a survivorship free database. I will also outline the sample period used to test the different strategies.

Part 2 will introduce you to the specific technical indicators which will be used by some of the strategies.

Part 3 is where you'll learn the rules to 5 short-term trading strategies that have a high win-rate and positive expectancy. Importantly, these rules will be backed up by a decade's worth of data research and will be entirely quantifiable.

Part 4 is where you'll learn some swing trading strategies as well as how to further quantify and analyse the market/sector type. Within this chapter I have included a couple of tests that illustrate why it is important to use different setups during different market contexts.

Part 5 is where you'll learn the step-by-step instructions for how to scan for the signals using free software that is available on the internet.

Part 1

Before we begin to study any particular strategy, we must first understand the process which we intend to use when testing. There are some standard best practices which should be adhered to when testing or creating any type of trading system, and it's those best practices which I will explain first.

The data which I'll be using

Each of the strategies in this book will use daily data. There's a couple of reasons for this…Firstly, trading strategies which can be applied using an end-of-day data feed are easier to manage than trading systems which require you to monitor positions during the course of day.

Secondly, I want you to be able to use free software and still be able to scan for signals. Intraday data-feeds often come at a considerable price and seeing as I recommend that you monitor how the strategies perform on a live market before committing any real money, I don't want you have to buy any software before deciding if what you've learned is something that you want to apply to your actual trading.

With the above said, the data which I shall be using for the tests will be the End-of-Day data provided by Norgate Premium.

The free end of day data which is provided by ProRealTime will be sufficient for you to scan for signals (although if you intend to test the strategies you would be better served by owning Amibroker Professional Charting Software).

Full instructions of how to scan for signals in will be provided later on.

The markets which I will test

Each of the strategies in this guide will be tested on a survivor-free database of liquid stocks which belonged to the S&P500 *at the time of the trade*. This is an important distinction to make.

For example, suppose that I wanted to test a strategy on a basket of stocks which belonged to the S&P500 *today*. This would cause a problem because doing so would introduce a survivorship bias to any results.

The bias would be that certain stocks might have gained value because of their inclusion in the Index, or they may have been included in the Index because they have gained value.

Furthermore, some institutional trading firms have a mandate that only permits them to trade stocks which belong to a certain Index. Again, this can cause the stock to perform better than if it otherwise hadn't been in a particular Index.

Most importantly, the S&P500 constituents of today are vastly different to what they were ten years ago. Some stocks, for example Apple, might have been in the index for all of that time…and in that time have performed exceptionally well.

However, there are many stocks which used to be in the index but have since been removed or delisted altogether. Knowing that one of the reasons for a stock getting removed from an index is that it has lost value, we can understand why it is important to include such stocks in any historical test.

Take ACAS as an example…

If we only test on stocks which are in the S&P500 *today*, our back-tests would show that we would never have taken a trade in ACAS during 2008, *even though ACAS did belong to the index at that time*.

Allowing ourselves to avoid trading a buy signal in ACAS during a back-test would clearly present a favourable bias our results.

Rather than take my word for it, I can illustrate the impact of survivorship bias more clearly if I run a couple of simple tests.

The following results are found if testing the exact same strategy rules.

In Test (A) I will be using a database of stocks which belong to the S&P500 *today*.

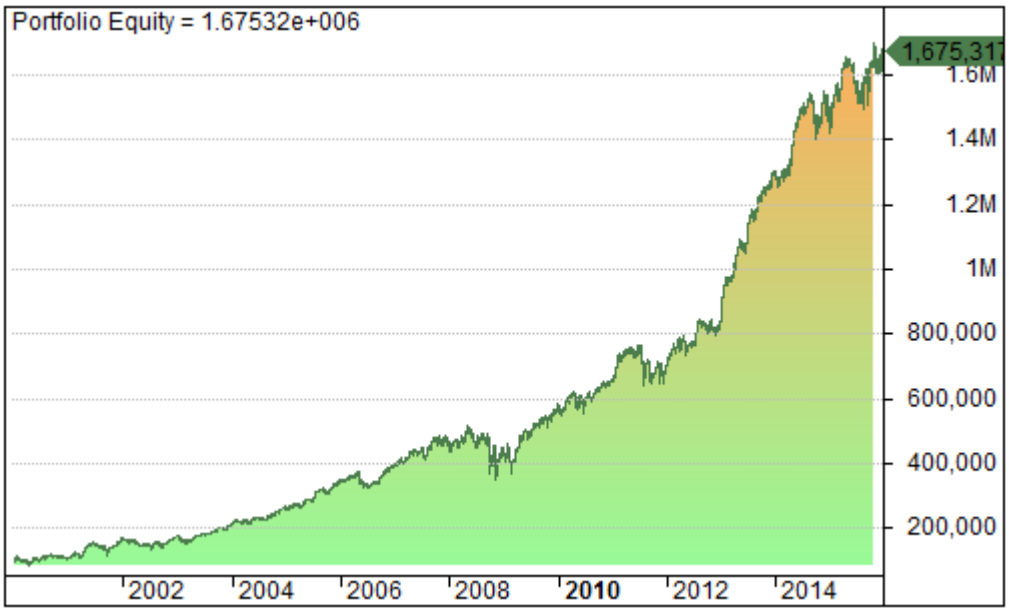
In Test (B) I will be using a database of stocks which belonged to the S&P500 *at the time of the trade*.

If you're curious, the strategy will simply buy a stock if it has had 5 consecutive days where the closing price was below the open.

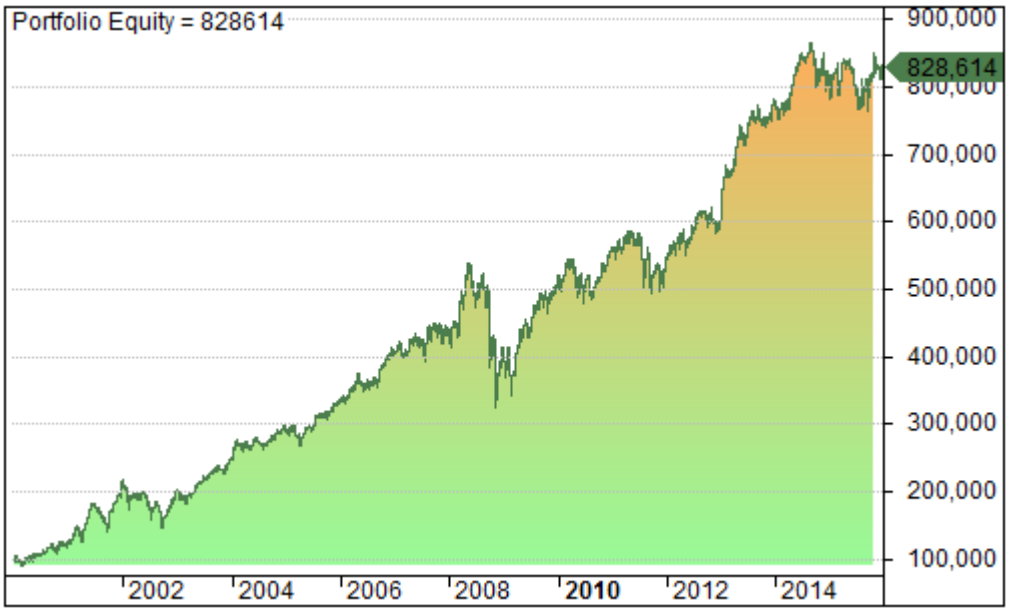
Open positions are exited if the close is higher than the previous day high.

The test was run between 01/01/2000 and 31/12/2015. The hypothetical starting balance was $100,000. 10 positions were allowed at a time with 10% of available equity allocated to each position.

Test A. Current S&P500 Constituents Test Results



Test B. Historically Adjusted S&P500 Constituents Test Results



The previous 2 charts illustrate that testing a strategy on a basket of stocks that does not account for survivorship bias will produce a significantly positive bias to any test results (In this case, the net profit of the strategy over the past 15 years was more than doubled!).

We don't want that bias because it will lead us to believe that our system is better than it actually is. Remember, unless you are a clairvoyant you would have had no idea in the year 2001 which stocks would still be in the S&P500 in 2015.

You must therefore account for that reality when running your back-test.

The liquidity and price filter which I will use

The liquidity of a stock refers to how easy it is to buy or sell shares without seeing a significant change in price. For example, one of the most liquid issues in the entire US stock market is SPY.

SPY is the ticker for the S&P500 Exchange Traded Fund (ETF). It trades an average 200 million shares per day and because of that very high volume, the bid/ask spread is almost never greater than 1 cent. We would therefore refer to the SPY as a highly liquid issue.

At the other end of the spectrum, we have very thinly traded and illiquid issues such as NWLI. It trades an average 10,000 shares per day. The current Bid/Ask spread for NWLI is $1.34. Taken as a percentage of the price, that represents a 0.52% Bid/Ask spread.

In simpler terms, if you bought NWLI at market, and then wanted to immediately sell at market, the price of the stock would have to rise by 0.52% (all else being equal), just for you to break even.

In order to prevent our back-test from trading illiquid stocks, I will apply a filter which only allows us to enter a trade if the 21 day average volume of a stock is greater than 1 million shares ***on the day of the signal.***

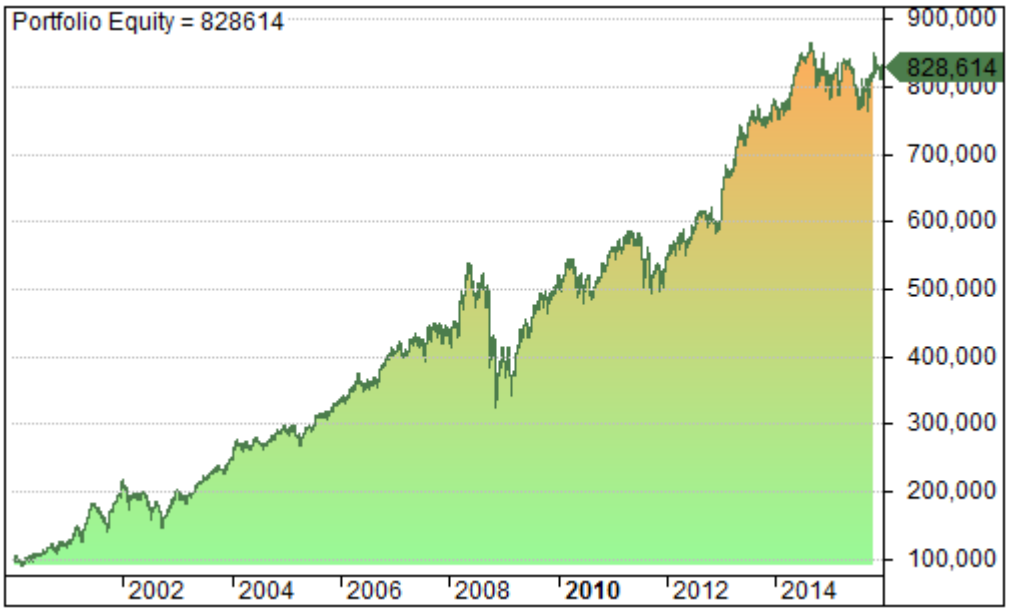
The above emphasis needs to be explained further because it is another problem found in many published strategy back-tests.

Accurate Volume and Price Filters

When testing a strategy on a basket of stocks, it is common to include a price or volume filter which only permits a trade if a certain price or volume threshold is met.

For example, the strategy from Test B had a rule which said that only stocks which were above $5.00 and had an average 21 day Volume greater than 1 million shares could be traded.

To remind you, the results of the survivorship bias free strategy test were as follows…



However, the above results are also unrealistic because many of the trades which were permitted during our back-test would not have met our minimum price and volume filter *at the time of the trade*.

Why?

The reason has to do with the historical data adjustments and its effect on the value of the historical price and volume data.

Split-Adjusted Data

When a stock gets split, the historical data is adjusted so that the split is removed from the time-series.

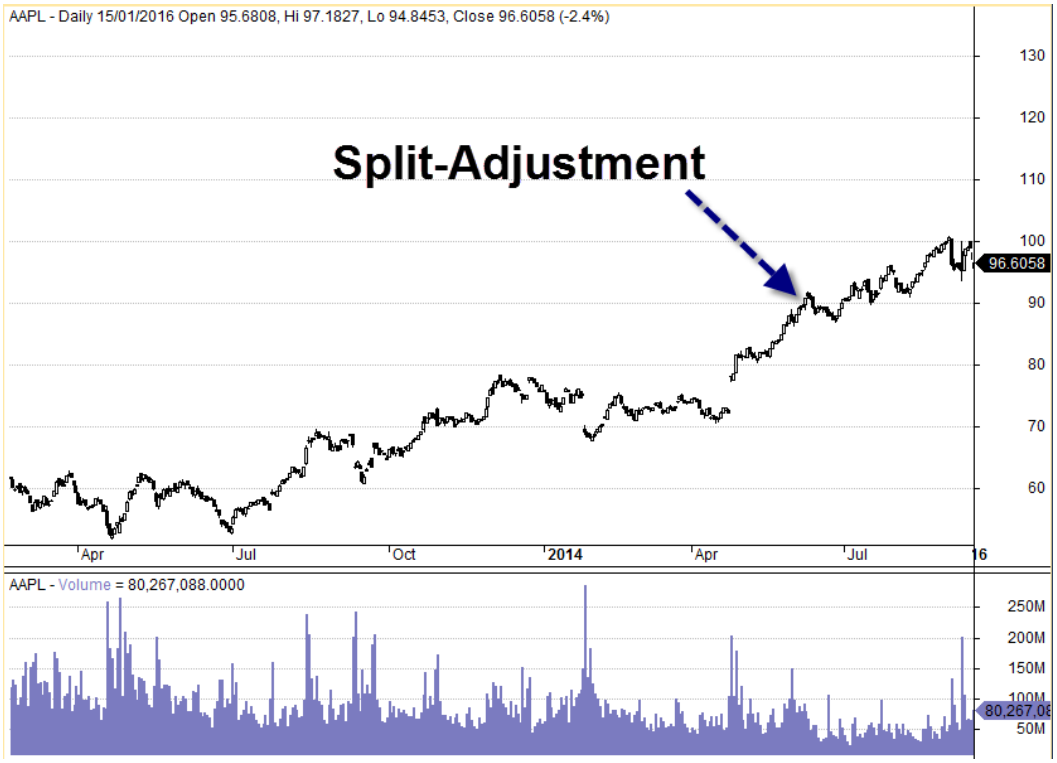
To understand why we use split-adjusted data we can study two charts of AAPL stock.

Chart A **is not** adjusted for splits.

Chart B **is** adjusted for splits.

Chart A. Not Split-Adjusted

Chart B. Split-Adjusted



If we owned 100 shares of AAPL on the 06/06/14, our shares would have been worth $64,547. On the day following the 7-1 split, AAPL traded at $89.82.

However, your 100 shares were not suddenly worth only $8982!

What happened is that following the 7-1 split, you would have owned 7 times the number of shares.

By using split-adjusted data, the big gap which appears on the price chart is removed because all of the historical data is adjusted for the split. This makes our test results realistic.

I appreciate that most of you will already know the above, but what some of you might not have previously considered is that if you use a price or volume filter on data that is split-adjusted, the price and volume filter which you are using will not resemble the price or volume that you would have had ***at the time of the trade.***

For example, many books and online articles about trading strategies might have a filter which says something like:

- Only trade stocks with Volume > 50 Million.
- Only trade stocks which are less than $100.

They will then test the strategy on split-adjusted data and present the results. However, if you look at the above charts of AAPL you can see why this is a mistake.

If you were actually trading AAPL on 01/01/2014 and your strategy only allowed you to buy a stock if the volume was greater than 50 million, your strategy rules would not have permitted you to buy AAPL because the volume of shares traded *at that time* was less than 50 million.

Similarly, if your strategy only allowed you to buy a stock if the price was less than $100, you would also not have bought AAPL because *at that time* AAPL shares were trading for about $560.

But when testing the strategy on the split-adjusted data, both the volume and price filter thresholds would have been satisfied because the prices have been adjusted down by a ratio of 7-1, and the volume has been adjusted up by a ratio of 7-1.

Clearly this has introduced a huge bias to the test results because AAPL is the type of stock that we could test just about any long only strategy on and a back-test report will show a profit.

Rather than take my word for it, we can run another test. The following strategy is to be tested on split-adjusted data and has a price and volume filter which states:

- Only trade stocks with 21 day average Volume > 1 Million.
- Only trade stocks which are more than $5.00.

The results are below…

- Trades = 5369

- Average P/L per trade = 0.44%
- CAR = 14.37%
- Net Profit = 756.85%

However, the above results are overstating the potential of our strategy because the price and volume filters which were used did not account for the historical split-adjustments.

In other words, the test was permitting trades that our rules would not have actually allowed if trading the market in real-time.

To overcome the bias, we must apply the price and volume filter to the unadjusted data when testing our strategy on the adjusted data.

When doing so, the results of the above strategy are significantly different…

- Trades = 4753
- Average P/L per trade = 0.38%
- CAR = 10.59%
- Net Profit = 400.60%

As you can see, ignoring the issue of split-adjustments when applying a price or volume filter to your strategy back-test will often lead you to overstate the potential profitability of your strategy.

So to summarise, each of the strategies which I test in this book will only permit a trade if the 21 day average volume of a stock is greater than 1 million shares AND the price is greater than $5.00 ***on the day of the signal.***

Sample Period

The sample period that I will use for each of the strategy tests will begin on the 01/01/2007 and end on the 31/12/2015.

The reason that I have chosen this period is that it includes a variety of different market conditions.

During the purple portions of the data on the following chart, we can see that the overall stock market (as gauged by the SPY etf) was exhibiting choppy price behaviour.

The red portion of the data shows when the market was exhibiting bearish price behaviour.

And the green portion of the data shows where the market was exhibiting bullish price behaviour.

Part 1 Conclusion

The purpose of writing part 1 of this guide was to provide you with confidence that the methodology I've used to test the following strategies was sound.

Furthermore, the ease with which people can now self-publish a book or start a web-site has meant that there are now more sources of trading strategy information than ever before.

This is great for getting new ideas, but not so great in the sense that much of the information which you read about might be inaccurate.

Part 1 of this book has provided you with a couple of the most common examples of how people might present the test results of a strategy that are not reflective of how a strategy could have been traded in real-time.

This might be because the results are found using a survivorship biased database, or perhaps the test didn't account for data adjustments.

Either way, the next time that you are impressed by the test results of a particular trading strategy; it could save you a lot of money if you find out before making a real trade whether the results of the strategy were obtained from a test that accounted for the above biases.

Part 2

In this section of the book, I will introduce you to the main technical indicators which will be used to quantify some of the strategy rules that you will learn about in part 3.

If you've already been trading for a while, you'll undoubtedly be familiar with these indicators and might like to skim this part of the book.

However, the feedback that I received for my first two books reminded me that there are plenty of readers who are new to trading and haven't yet heard of a moving average, let alone a Cumulative IBS indicator. This part of the book is predominantly for you.

Moving Average

A moving average is simply an average of price during any given period.

For example, if we set a moving average to 21 days and we use closing prices to calculate the moving average, the moving average will tell us the average closing price for the past 21 days.

If we set the moving average to 5 days, it will tell us the average price of the past 5 days, and so on.

The following chart plots the 21 day moving average (the red line) on the price series:

Rate of Change % (ROC%)

The rate of change percent indicator (or ROC%) simply tells us the percentage return of a stock during a given period.

For example, a 100 day ROC% indicator will tell us the percentage return of a stock during the past 100 days. A 21 day ROC% indicator will tell us the percentage return of a stock during the past 21 days, and so on.

The following chart plots the 100 day ROC% indicator (the blue line) beneath the price series:

Note that I've also marked the zero line in red. A very simple tool for quantifying the trend of a stock is to simply look at the value of the 100 day ROC%.

If it's above zero, the trend is up.

If it's below zero, the trend is down.

To make the above point we can analyse the average 21 day % performance of all stocks that have traded on the S&P500 since 2007.

If you only buy stocks that have a 100 day ROC% greater than zero, the average 21 day return per stock is 0.96%.

If you only buy stocks that have a 100 day ROC% less than zero, the average 21 day return per stock is only 0.40%.

Internal Bar Strength

The Internal Bar Strength indicator (or IBS) measures the relationship between the closing price and the high or low of the day.

To calculate the IBS you can use the following formula:

(Close - Low) / (High - Low) * 100

For example, if the Closing price is $55.99, the Low price is $55.77, and the High price is $56.69, we calculate the IBS as:

(55.99 – 55.77) / (56.69 – 55.77) * 100

The IBS value would therefore be 23.91.

The following chart plots the IBS indicator (the blue line) beneath the price series:

As you'll soon discover, the IBS indicator is a very useful tool for identifying stocks that are short-term oversold.

RSI(2)

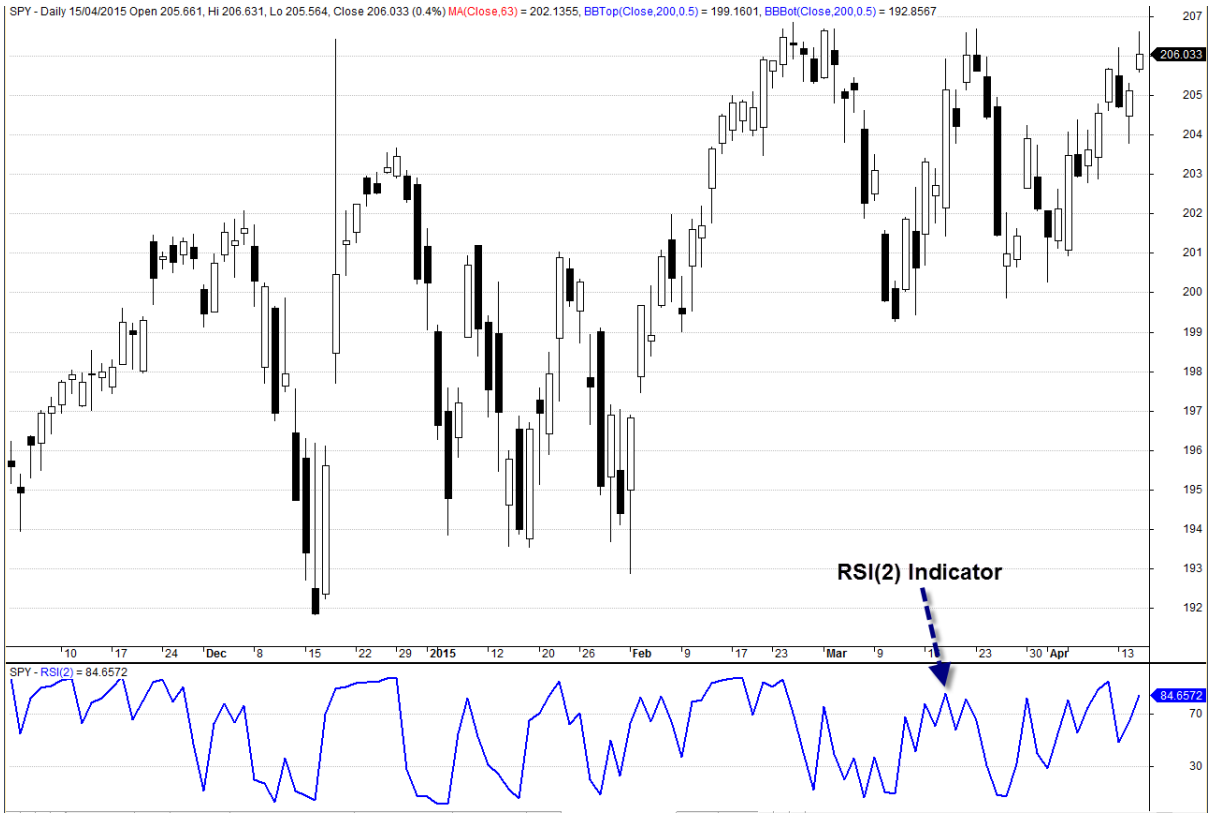
The RSI(2) indicator was popularized by Larry Connors and is simply an RSI indicator set to 2 periods.

Connors found that stocks which had a low RSI(2) reading produced above average short-term returns, and stocks which had a high RSI(2) reading produced below average short-term returns.

The RSI indicator is found on all charting packages so you needn't worry about the formula for calculating it.

Just remember that the default RSI setting of 14 needs to be changed to 2.

I've plotted the RSI(2) beneath the following chart of the SPY etf. Note that high RSI(2) values tend to precede a minor fall in price, and low RSI(2) values tend to precede a minor rise in price:

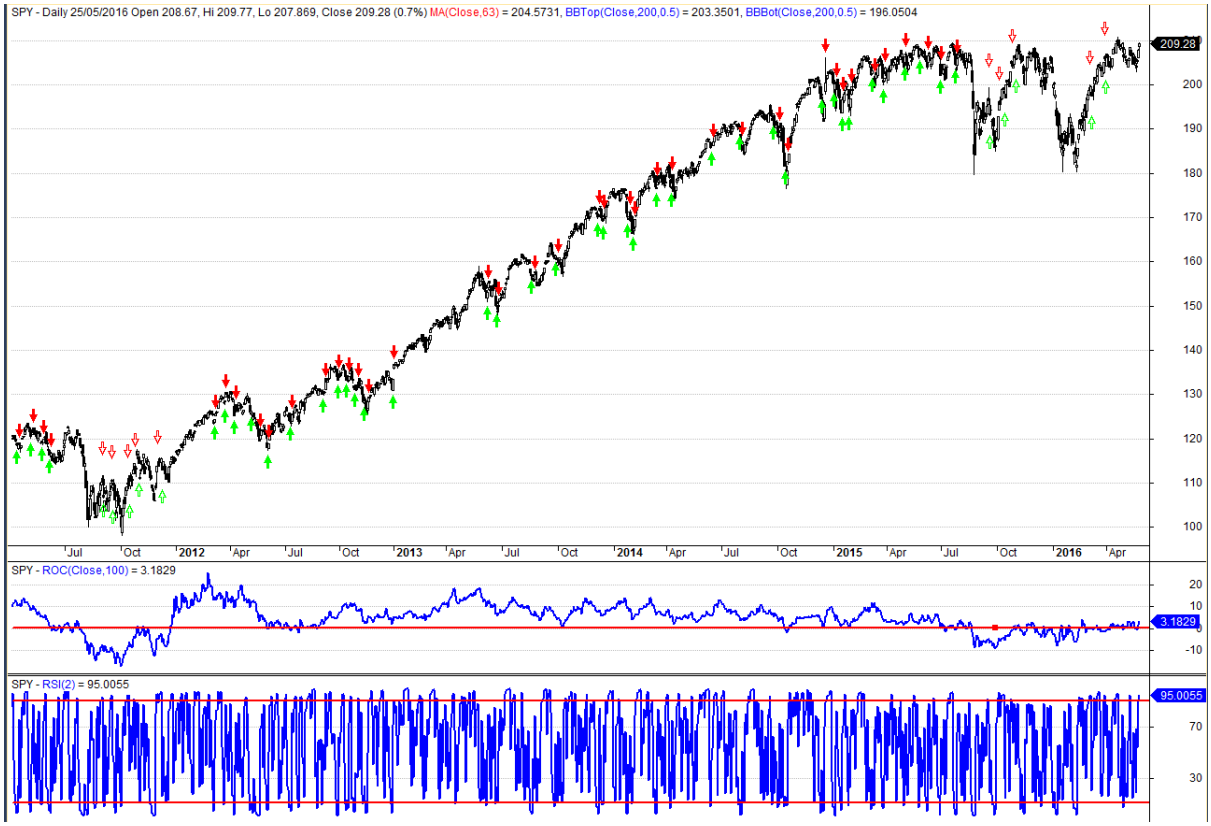


To illustrate how you might like to test the RSI(2), I've created a very simple strategy and tested it against the SPY for the period 01/01/2007 – today:

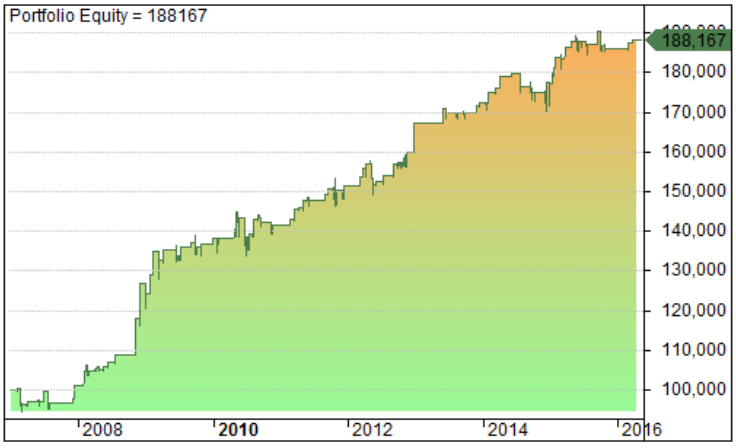
The rules are:

- Buy the SPY when the RSI(2) crosses below 10 AND the 100 day ROC% is **above** zero.
- Exit long positions when the Closing price is higher than the previous day High.
- Short the SPY when the RSI(2) crosses above 90 AND the 100 day ROC% is **below** zero.
- Exit short positions when the Closing price is lower than the previous day Low.

The following chart plots the entry and exit arrows for the past 4 years:



Below is the Equity curve produced by the back-test:



Please note that I don't trade this system and that it is solely provided as educational example.

Average True Range (ATR)

The average true range (or ATR) measures the average daily volatility of the stock that you are trading.

Simply put, the ATR allows us to determine the average daily price move of a stock during the past *X* days.

This information is useful for a variety of reasons, but in this book the ATR will be used predominantly to determine where to place buy-limit orders and stop-losses.

The reason that I determine where to place limit orders using the ATR instead of a specific percentage move is that different stocks have different characteristics. Some stocks might rarely move 4% in day, whereas other might frequently move 4% in day.

This means that if I place a limit order 4% below the current price, only those orders for stocks that regularly move 4% a day are likely to get filled.

By using a factor of ATR to determine where to place my limit order, I am just as likely to get my orders filled in a stock that moves 1% per day, as I am a stock that moves 4% a day.

For example, the following chart plots the 21 day ATR beneath the price series. It tells us that the average daily price move of WDC is about $1.97. Expressed as a percentage of the current price ($44.38), the average daily range is therefore about 4.4%.

With this information I could place my limit order 4% below the current price and know that if my order gets filled, it will be filled at a price that is close to the bottom of the expected daily range.

One problem with the above approach is that other stocks (such as IBM) have an average daily range (in percentage terms) of about 1.67%.

This means that if I have a rule which only buys on a limit price that is 4% below the current price, I'll rarely get filled if trading IBM.

But by using the ATR to determine where to place a limit order, I can ensure that all else being equal my IBM order is just as likely to get filled as my WDC order.

Bollinger Bands

Developed by John Bollinger, Bollinger Bands® are volatility adjusted bands that are placed above and below a moving average.

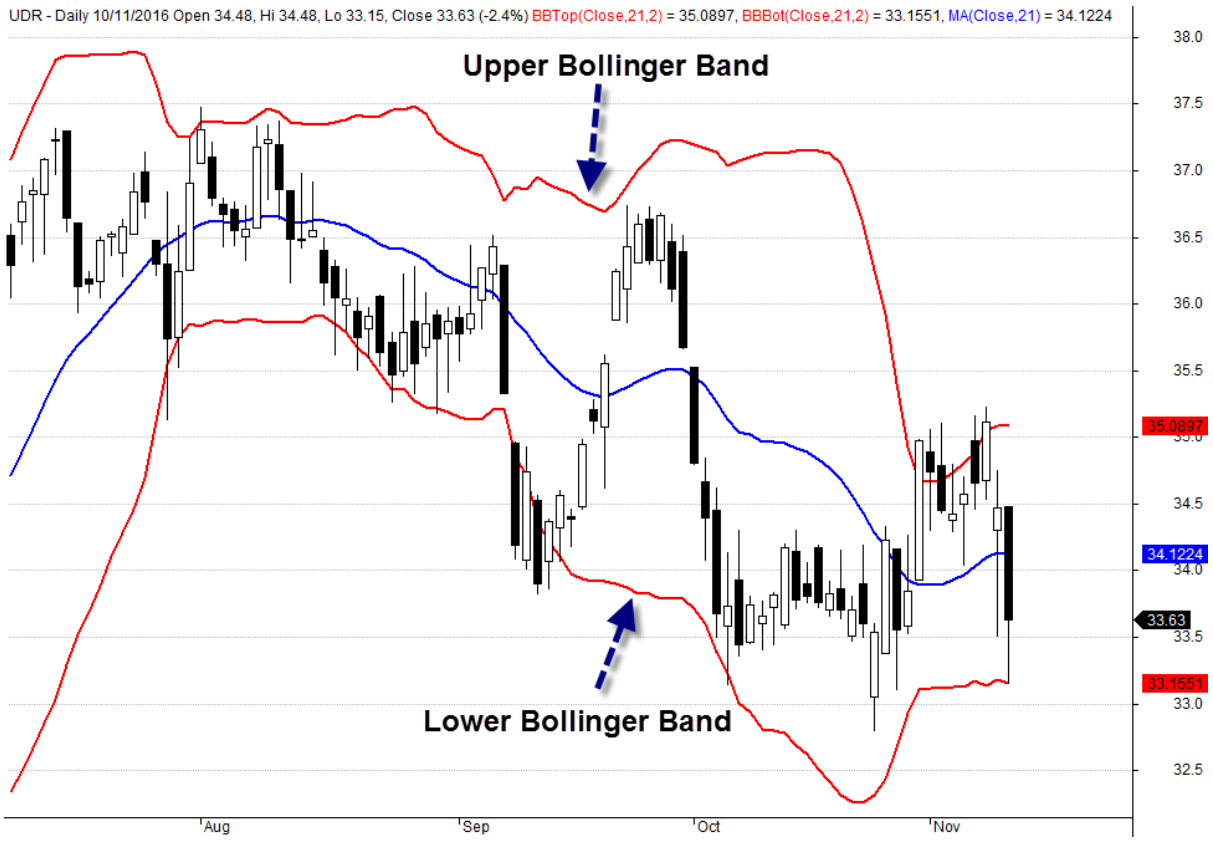
To calculate the Bands you can use the following formula:

- Middle Band = N-day simple moving average (SMA)
- Upper Band = N-day SMA + (N-day standard deviation of price x *Y*)
- Lower Band = N-day SMA - (N-day standard deviation of price x *Y*)

Where *N* = Periods used.

Where *Y* = Standard deviation multiplier.

For example, the Bollinger Bands seen in the following chart are calculated using the past 21 days and a standard deviation multiplier of 2.



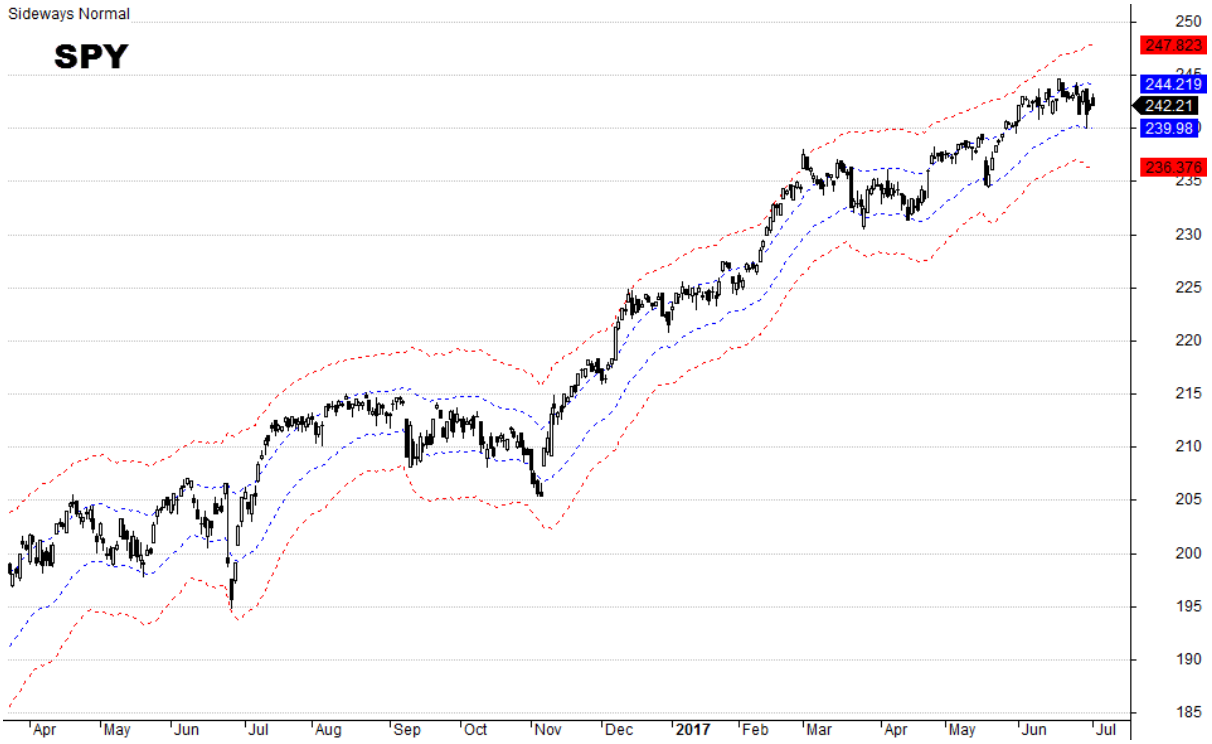
Keltner Channels

Keltner channels are similar to Bollinger bands except that instead of using the standard deviation of price the bands are placed *Y* * ATR above and below an exponential moving average.

The width of the bands that you use will in part depend upon the usual volatility of the stock/sector/market that you're analysing, but I find that about 1.35 * ATR(21) and a 21 period EMA works well for the SPY and most of the major sector ETFs.

Also note that many analysts use a number of different width bands to help them gauge how overbought or oversold a market is.

For example, the following SPY chart has a 21 period EMA (invisible) and the Keltner bands are set at 1.35 (blue) and 2.7 (red) times ATR above and below the EMA. Note that the majority of price action occurs between the blue bands and that moves outside of the red bands tend to be unsustainable.



Keltner bands are particularly useful because they allow you to easily scan a chart and determine quantifiably determine whether or not a market is trading towards the top or bottom of a range.

In a later chapter you will learn why it is worth using Keltner channels especially during a sideways market type.

Part 3

In this part of the guide you will learn a variety of quantitative short-term strategy rules which have significantly outperformed the market during the sample period.

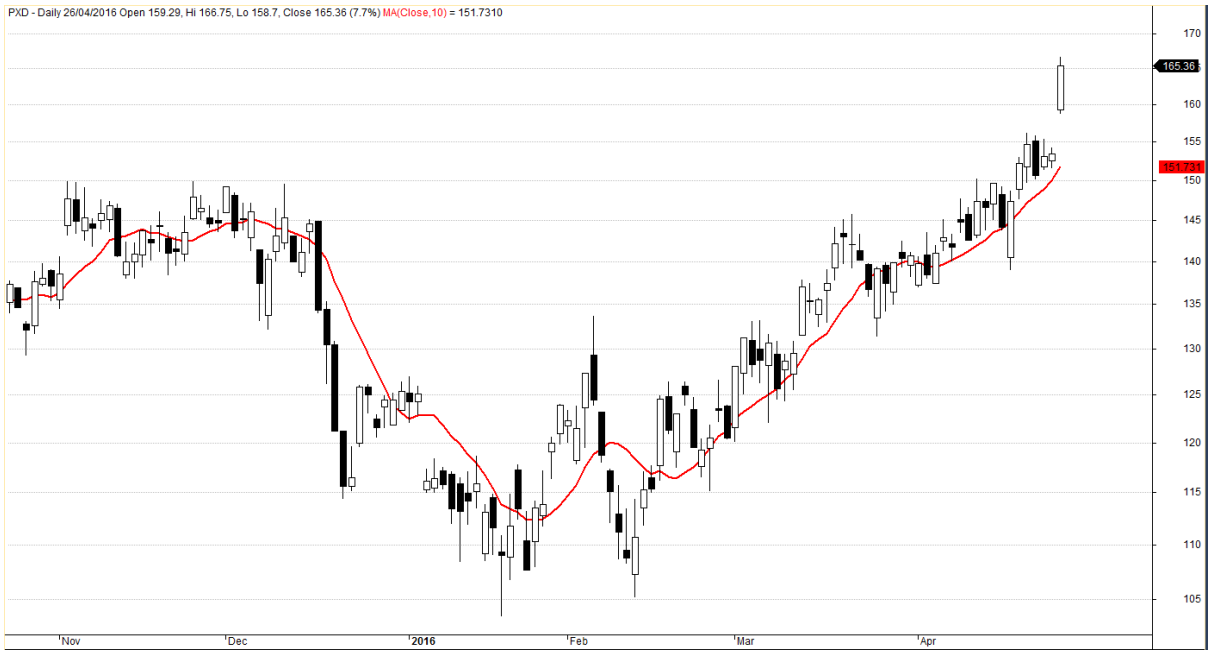
Short-Term Mean-Reversion

Mean-Reversion is a theory which suggests that the price of a stock will move to its average price over a period of time. Quite simply, if a stock price is significantly lower than its mean price over *x* period, we expect the price to rise.

Conversely, if a stock price is significantly higher than its mean price over *x* period, we expect the price to fall.

In the following example we have a price chart of stock $PXD with a 10 period moving average (the red line).

Note that whenever the price rises above or falls below the moving average, the price will tend to then revert back to the moving average.



Simply put, a mean-reversion strategy is to buy low and sell higher, or sell short high and cover lower.

Of course, there are a variety of methods for defining “low” and “high”, some of which we’ll cover in this chapter.

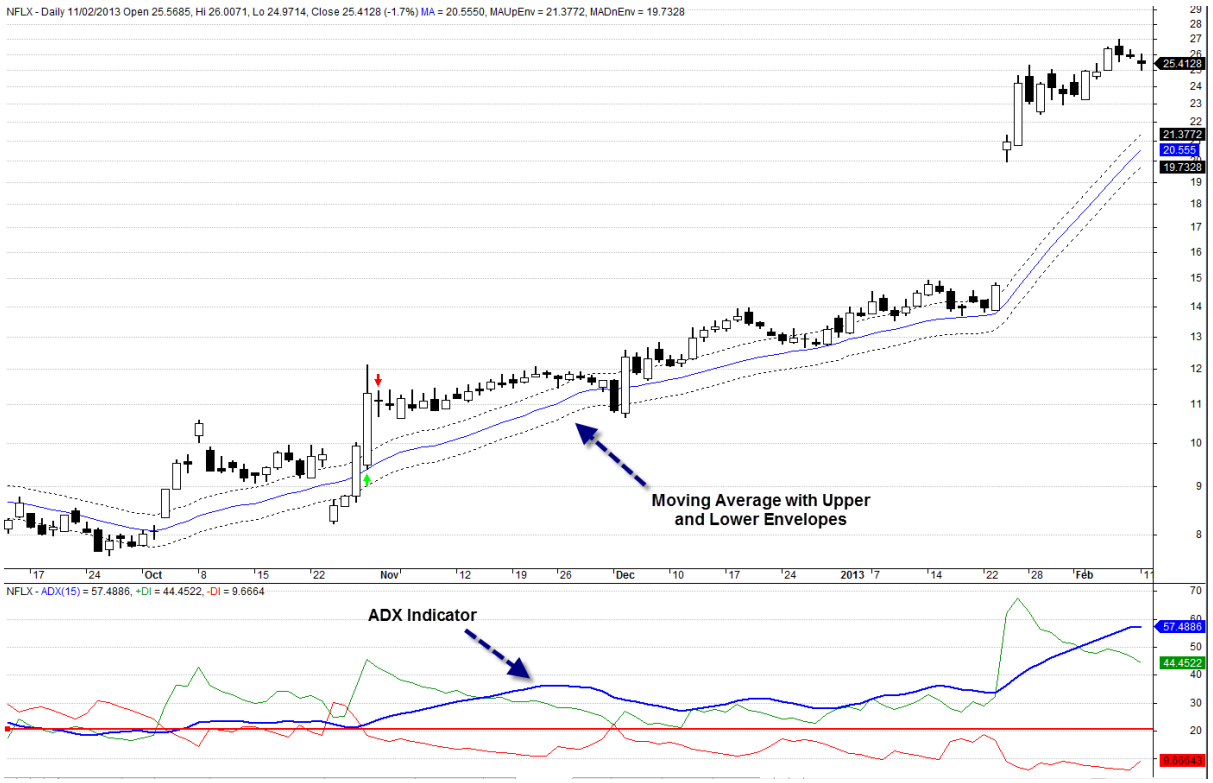
But before we get to it, I want to provide an example of a mean-reversion strategy that you can read about online and which many of you might already be familiar with.

The basic idea is to find a stock in an uptrend and then enter a position during a temporary pullback.

To define a stock in an uptrend the strategy uses the ADX indicator. Only stocks with an ADX reading higher than 20 are considered.

Then a pullback is defined. The method used to identify a pullback is to place an envelope that is *X* % above and below a 21 day moving average. If prices are below the lower envelope, the stock is considered to be in a pullback.

For example, the following chart plots the ADX indicator beneath the price series and a 21 day moving average with upper and lower envelopes that are 4% above and below the moving average.



The above cherry-picked chart shows two very good trade entries using the system logic. The first was at the end of October and the second was at the end of November.

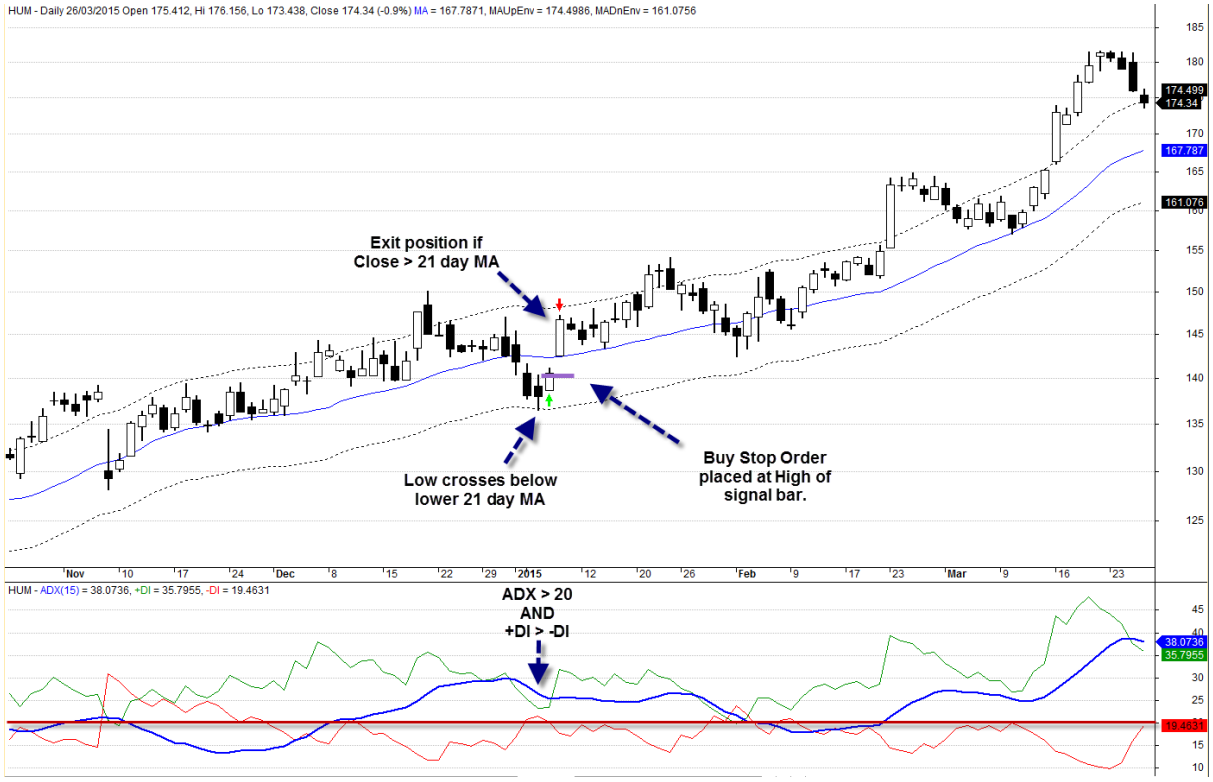
The exact rules of the strategy are as follows…

- ADX > 20 and +DI > -DI
- Low crosses below the (21 day Moving Average * 0.96)

If the above 2 rules are satisfied, a buy-stop order is placed at the high of the signal bar. The idea for using a buy-stop order is that if the price keeps falling, you will avoid buying the stock.

Open positions are exited if the closing price is greater than the 21 day moving average OR you are stopped out of the trade for a loss if the price falls 15% below the entry price.

Below is another example of a winning trade…



I tested the above strategy taking ALL available trades during the sample period. The average performance metrics are below…

- Trades = **380**
- Average P/L% per trade = **0.24%**
- Win-rate % = **69.21%**
- Profit factor **= 1.11**

The above strategy is basically a dud, yet this is a strategy that was found on one of the most visited websites on the internet if you search for "stock trading strategies".

Of course, whenever you read about strategies like this one, the article will be accompanied by some cherry-picked trade examples.

But rarely will you also get to see the complete performance metrics of the strategy if traded on a reasonable sample of data.

For the remainder of this chapter, you will not only learn the rules to a variety of strategies that are far more profitable than the majority of strategies which are published about online, but you'll also get to analyse the performance metrics of those strategies when applied to a basket of stocks over a prolonged period of time.

Sample Period

To remind you, the sample data will begin on the 01/01/2007 and end on the 31/12/2015.

Data

The following strategies were each tested on a survivorship bias free database of S&P500 stocks.

Commissions

For each of the strategy tests, I will apply a $0.01 per share commission with a minimum cost of $2.00 per trade. A round-turn will therefore cost a minimum of $4.00.

Position-Sizing

The way that I'll test the strategies is two-fold. Firstly, I will run tests that will discover the **average** per trade performance metrics of each strategy if **all** available signals during the sample period were traded. Each position during these tests will have a $5000 allocation.

Then once you have learnt about the different strategies and corresponding average performance metrics, I will test the strategies as if they were being traded as part of a portfolio. This will require a maximum limit to the number of open positions that you would hold at any one time.

For the portfolio tests I will use a starting balance of $100,000 and there will be a maximum of 5 open positions allowed in the portfolio at any one time. During these tests each new position will be allocated 20% of available equity.

The reason for testing the strategies in this way is that I recommend you are selective in the signals that you actually trade.

For example, rather than trading multiple signals as and when they are produced, you might only trade the signals if they are produced by a stock with strong fundamentals, or perhaps you'll only trade the signals if they are produced by a stock from a strong industry.

As you'll also learn in a later chapter, you can also incorporate classical charting principles (which are harder to quantify) with your quantitative signals.

Whatever other criteria you have, knowing the **average** performance per trade of a strategy will provide you with a reasonable expectation for each of the individual trades that you do enter.

The reason that I then test the strategies as if it were a real portfolio with a cap on the number of open positions allowed at any given time is so that we can analyse a typical equity curve that would have been produced by the strategies if you had traded them in this way during the sample period.

This is useful because it will allow us to analyse how well distributed the profits of the strategy are and we can also analyse whether there were certain market environments when the strategies performed differently.

Because I first published these strategies in Jan 2015 (as I write this it is April 2017) we will also be able to analyse the out-of-sample performance of the strategies, as well as performing a Monte-Carlo analysis of the out-of-sample results.

For a more thorough explanation of why it can be insightful to analyse an equity curve, please see the blog post that I published here.

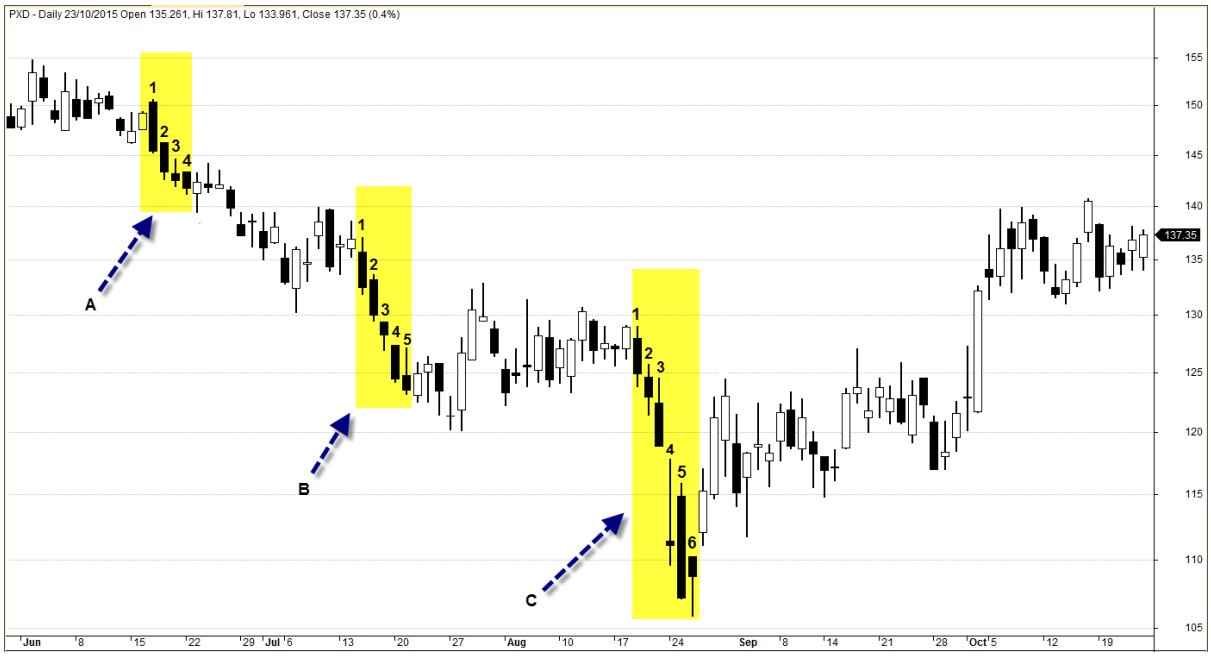
So without further ado, let's get to the strategies!

Strategy 1 – Consecutive New Low Down Days (CNLDD)

The first strategy is the most simple in the book, but it is still far more effective than many of the curve-fit strategies that you'll find online.

Whenever there is a number of consecutive days whereby the close is lower than the open and the low is also lower than the previous day's low, we want to buy the stock.

The following chart shows three different examples of the CNLDD setup. In setup "A" there are 4 CNLDD, in setup "B" there are 5 CNLDD and in setup "C" there are 6 CNLDD.



Upon identifying a number of CNLDD, we place a limit order which is *X* * ATR(5) below the low of the signal bar. Essentially, we are looking to identify oversold stocks and then place limit orders which will only trigger if there is further intraday weakness.

As an example, at point A of the following chart $MCHP has made 3 consecutive days whereby the low was lower than the previous day's low and the close was lower than the open.

After identifying this oversold CNLDD signal we then decide to place a buy limit order beneath the low of the signal bar.

In this example, we place the limit order 0.25 * ATR(5) beneath the low.

Low on day of signal bar = $43.16

ATR(5) value = $0.94

Limit order = ($43.16 – (0.25 * 0.94))

Limit order = $42.92

Note that on the day following the signal (point B) the stock fell beneath the limit price and the buy order would have been executed.

The number of CNLDD that you identify and the distance between the signal bar low and the limit-order that you place is one of the key determinants in how profitable this setup has been during the sample period.

So the 2 choices you have are:

1. How many CNLDD will you identify before placing a limit order?
2. How far below the low of the signal bar will you place the limit order?

To help you decide I ran some tests that used either 3 or 4 days for the number of CNLDD, and between 0.25 and 3 times the ATR(5) value to calculate where to place the limit order.

The exit rule is a close above the highest high of the past 5 days OR exit any open positions after holding them for 10 days.

The results of these tests are presented in the following tables (note that these results are found if trading all setups during the sample period):

3 CNLDD Average Results

3 CNLDD	# of Trades	Avg % P/L Per Trade	Avg Bars Held	% of Winners	Profit Factor
Limit Order 0.25 * ATR(5) below low of Signal Bar	11944	0.83	8.67	61.71	1.35
Limit Order 0.5 * ATR(5) below low of Signal Bar	8295	0.91	8.85	60.31	1.37
Limit Order 0.75 * ATR(5) below low of Signal Bar	5427	0.97	9.07	59.59	1.39
Limit Order 1 * ATR(5) below low of Signal Bar	3437	1.16	9.2	59.50	1.45
Limit Order 1.25 * ATR(5) below low of Signal Bar	2160	1.26	9.37	59.40	1.5
Limit Order 1.50 * ATR(5) below low of Signal Bar	1404	1.65	9.5	61.25	1.7
Limit Order 1.75 * ATR(5) below low of Signal Bar	959	1.93	9.66	62.98	1.82
Limit Order 2.00 * ATR(5) below low of Signal Bar	678	3.52	9.79	66.67	2.57
Limit Order 2.25 * ATR(5) below low of Signal Bar	517	2.96	9.82	70.02	2.47
Limit Order 2.50 * ATR(5) below low of Signal Bar	398	3.06	9.92	69.85	2.53
Limit Order 2.75 * ATR(5) below low of Signal Bar	304	3.52	10.14	72.37	2.82
Limit Order 3.00 * ATR(5) below low of Signal Bar	249	4.13	10.11	74.70	3.35

4 CNLDD Average Results

4 CNLDD	# of Trades	Avg % P/L Per Trade	Avg Bars Held	% of Winners	Profit Factor
Limit Order 0.25 * ATR(5) below low of Signal Bar	4677	1.13	8.55	61.77	1.45
Limit Order 0.5 * ATR(5) below low of Signal Bar	3260	1.16	8.74	60.28	1.45
Limit Order 0.75 * ATR(5) below low of Signal Bar	2099	1.15	8.94	60.41	1.45
Limit Order 1 * ATR(5) below low of Signal Bar	1315	1.18	9.11	59.32	1.46
Limit Order 1.25 * ATR(5) below low of Signal Bar	784	1.43	9.24	59.31	1.57
Limit Order 1.50 * ATR(5) below low of Signal Bar	502	1.91	9.27	62.75	1.78
Limit Order 1.75 * ATR(5) below low of Signal Bar	319	2.57	9.4	63.95	2.07
Limit Order 2.00 * ATR(5) below low of Signal Bar	207	6.31	9.59	67.15	3.81
Limit Order 2.25 * ATR(5) below low of Signal Bar	139	3.29	9.58	69.78	2.44
Limit Order 2.50 * ATR(5) below low of Signal Bar	85	3.17	9.69	69.41	2.43
Limit Order 2.75 * ATR(5) below low of Signal Bar	54	2.29	10.09	74.07	1.84
Limit Order 3.00 * ATR(5) below low of Signal Bar	40	2.88	10.4	80.00	2.36

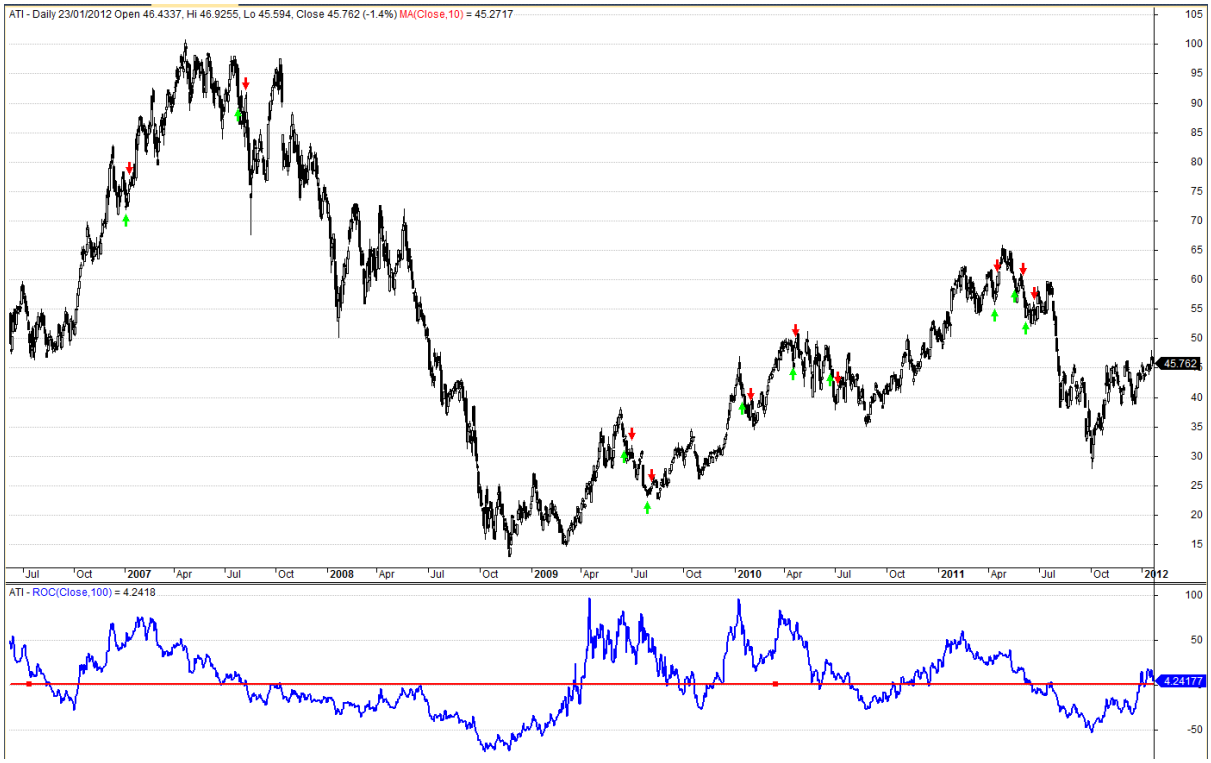
The above 2 tables suggests that the CNLDD strategy is profitable. Of particular interest is that the further away you place your limit order, the higher your win-rate and average return per trade.

The obvious downside being that if you place very conservative limit orders, you're rarely going to get an order filled.

The final element of the strategy is intended to reduce the likelihood of buying a stock that is in a persistent downtrend. To do this we will apply a simple trend filter to all of the strategies in the book.

Specifically, our filter says that we are only allowed to trade a stock if on the day of the signal it has had a positive return during the past 100 days.

For example, the following chart plots the 100 day ROC% beneath the price chart (the blue line). Note that trades are only permitted when the 100 day ROC% is above zero (the horizontal red line).



We can see from the above chart that our filter prevented us from buying ATI during the significant downtrend in 2008.

CNLDD Portfolio Results

For the next test I applied the portfolio management rules. Only 5 open positions were allowed at a time and 20% of available equity was allocated to each new position.

Note that if there are many signals on any given day, it might be unrealistic to place as many limit orders into the market.

For example, if your limit order is 0.25*ATR(5) beneath a signal bar but you have 15 signals on a single day…you would need to place multiple conditional limit orders into the market. This is not realistic for the majority of retail traders.

So for the tests which include portfolio management rules I will simulate entering on the open of the day following a signal. If there are multiple signals, we will place orders for the stocks with the highest 100 day ROC% on the signal day.

For example, suppose that you already hold 3 positions in your portfolio and you run a CNLDD scan in the evening which produces 8 signals….

Ticker	Date/Time	buysetup	InIndexToday	100DayROC%	CNLDDs	Industry	rank
MU	12/04/2017	1.00	1.00	46.33	3.00	Semiconductors	1.00
VIAB	12/04/2017	1.00	1.00	16.12	3.00	Movies & Entertainment	2.00
CCL	12/04/2017	1.00	1.00	14.83	3.00	Hotels, Resorts & Cruise Lines	3.00
ADI	12/04/2017	1.00	1.00	14.51	3.00	Semiconductors	4.00
CBS	12/04/2017	1.00	1.00	13.74	5.00	Broadcasting	5.00
OKE	12/04/2017	1.00	1.00	12.60	3.00	Oil & Gas Storage & Transportation	6.00
CMCSA	12/04/2017	1.00	1.00	11.44	3.00	Cable & Satellite	7.00
TXN	12/04/2017	1.00	1.00	10.92	3.00	Semiconductors	8.00

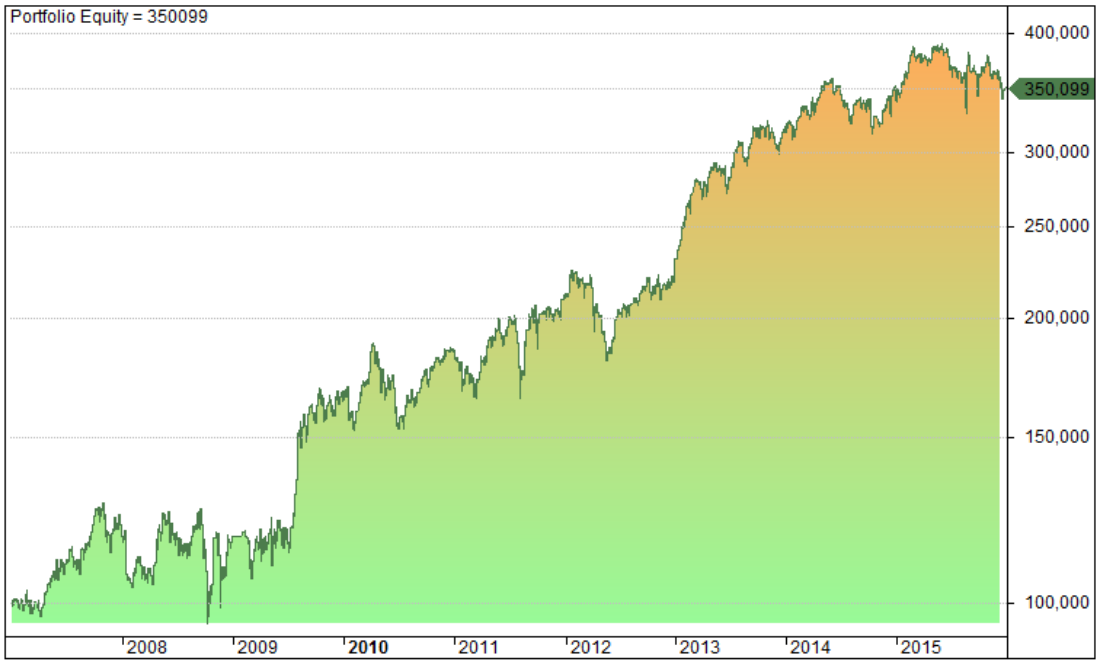
You would then identify which of the stocks have the highest ROC% value and place a Market on Open Order (MOO) for the top 2 highest ranked. In the above example, that would mean placing an order to buy stock tickers MU and VIAB at the following open.

Note that because we are buying at next day open as opposed to on a limit order beneath the low of the signal bar, the portfolio tests will produce a lower average percent win-rate and profit/loss per trade.

However, if we simply buy the next day's open after a signal then more trades will be executed and the net profit of the strategy will tend to be higher.

With that said, here are the results of the strategy when applying the portfolio management rules:

- Trades = **1193**
- P/L % per trade = **0.60%**
- Win-Rate % = **63.79%**
- Bars Held = **8**
- Exposure = **78.12%**
- CAR% = **14.94%**
- MDD% = **(-25.45%)**



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr%	MDD%
2007	-0.2%	0.7%	-0.8%	3.3%	5.1%	1.8%	-0.1%	4.0%	5.9%	5.3%	-6.1%	0.1%	20.1%	-11.1%
2008	-11.6%	4.1%	-4.7%	8.3%	7.4%	-4.6%	-2.7%	5.2%	-2.3%	0.4%	-6.9%	7.8%	-1.7%	-24.5%
2009	0.0%	-5.4%	2.7%	2.6%	0.8%	1.2%	9.0%	18.1%	3.0%	-1.4%	2.0%	2.5%	38.7%	-11.1%
2010	-3.4%	3.6%	7.2%	0.6%	-1.7%	-11.9%	6.9%	-0.4%	7.4%	1.8%	1.9%	1.5%	12.7%	-18.7%
2011	-7.7%	2.5%	1.5%	7.8%	4.8%	-0.8%	-3.8%	2.1%	-0.9%	5.6%	0.1%	3.4%	14.6%	-18.2%
2012	3.8%	0.0%	-1.7%	-6.7%	-7.5%	8.9%	0.2%	3.0%	4.6%	-1.2%	0.1%	4.5%	7.1%	-19.7%
2013	10.3%	8.4%	3.0%	2.5%	0.4%	-1.9%	9.0%	-3.5%	5.2%	2.8%	-4.2%	4.2%	41.1%	-7.6%
2014	0.1%	5.0%	0.4%	3.9%	2.0%	-1.5%	-8.0%	5.3%	-0.7%	-4.4%	4.0%	3.3%	8.9%	-12.3%
2015	2.0%	8.2%	-1.8%	-0.3%	2.3%	-4.5%	-0.5%	3.9%	-6.6%	6.1%	-3.5%	-3.6%	0.6%	-15.5%
Avg	-0.7%	3.0%	0.7%	2.5%	1.5%	-1.5%	1.1%	4.2%	1.7%	1.7%	-1.4%	2.6%		

Final CNLDD Strategy Rules

1. 100 Day ROC % > 0
2. 3 consecutive days which close lower than the open and have a low less than the previous day's low.
3. When the above rules are met, place a limit order that is *X* * ATR(5) below the low of the signal bar OR an order to buy at the next open.
4. Exit open positions if the close is greater than the highest high of the past 5 days OR you've held the position for 10 days.

Strategy 2 – MA Snap-Back Percent Rank

The next strategy is based upon the simple mean-reversion premise that if the price deviates too far away from the mean, it will eventually revert back to the mean.

For example, the following chart plots a 21 day moving average over the price series...

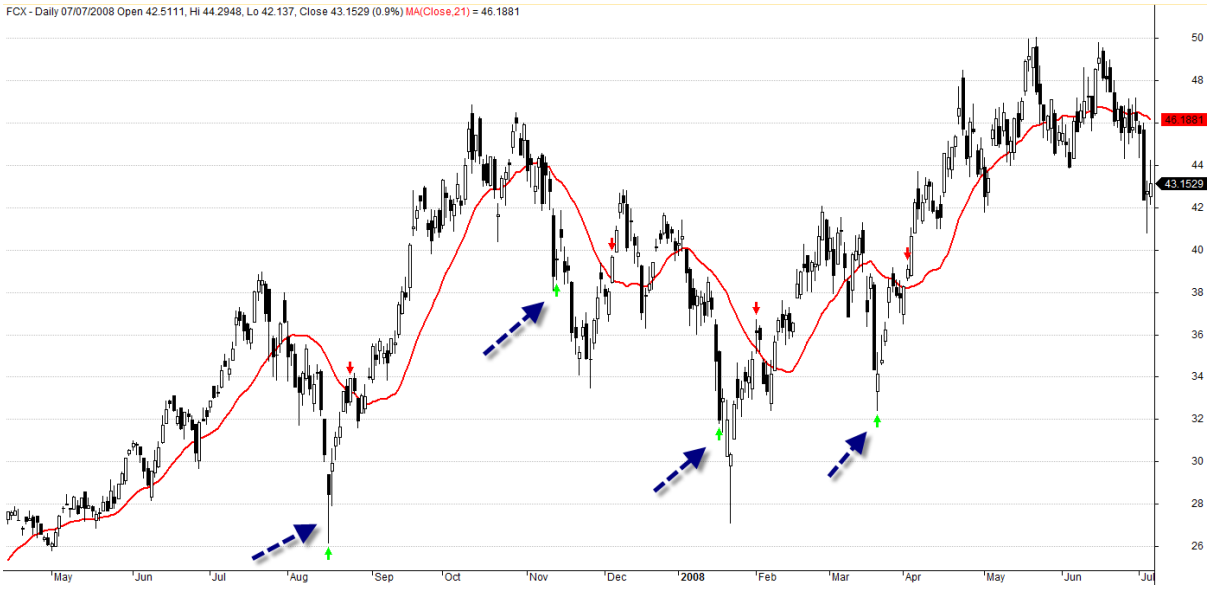
Note that whenever the price is a significant distance above or below the moving average, it tends to revert back to the moving average.

A simple strategy which seeks to profit from the above market behaviour is as follows:

- Buy if stock closes *x*% below a *y* day moving average.
- Sell if close is above *y* day moving average.

For example, if $x = 10$ and $y = 21$, we will buy a stock if it closes 10% below a 21 day moving average and we will exit our position when the stock closes above the 21 day moving average.

The following chart of $FCX shows 4 example trades between 2007 and 2008.



For the following tests I used a 6 day moving average and a variety of percentiles below the moving average that a stock needed to close before triggering a signal.

The exit strategy was a close above the value of the previous 6 day MA.

6 Day MA Snap-Back Average Results

6 Day MA Snap-Back	# of Trades	Avg % P/L Per Trade	Avg Bars Held	% of Winners	Profit Factor
2% Below MA	47092	0.44	5.62	65.90	1.25
3% Below MA	30603	0.54	5.85	65.26	1.26
4% Below MA	19986	0.66	5.99	64.60	1.28
5% Below MA	13623	0.83	6.05	64.69	1.31
6% Below MA	9568	0.97	6.11	64.23	1.33
7% Below MA	6854	1.18	6.13	64.24	1.37
8% Below MA	5056	1.38	6.19	64.08	1.39
9% Below MA	3806	1.60	6.22	64.14	1.42
10% Below MA	2933	2.13	6.18	64.95	1.54
11% Below MA	2266	2.76	6.15	65.53	1.67
12% Below MA	1767	3.36	6.12	65.37	1.78
13% Below MA	1390	3.92	6.07	65.68	1.89
14% Below MA	1112	5.24	5.9	67.99	2.21
15% Below MA	898	6.16	5.84	68.60	2.4
16% Below MA	733	7.21	5.79	69.85	2.66
17% Below MA	591	8.17	5.76	69.20	2.8
18% Below MA	481	9.69	5.65	71.52	3.12
19% Below MA	400	10.25	5.64	71.5	3.25
20% Below MA	333	11.38	5.59	71.17	3.42

The above table illustrates that buying stocks which were significantly below their own 6 day moving average was profitable during the sample period.

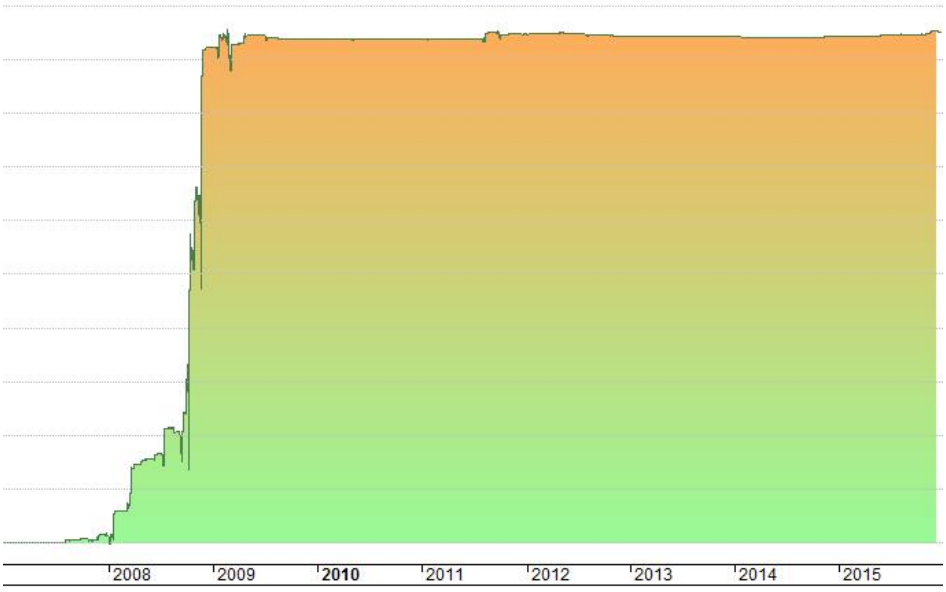
Also note that as you increase the percentile difference between the closing price and moving average, the average win-rate % and P/L per trade % of the strategy is improved.

The caveat being that as you increase the percentile difference between the closing price and moving average, you will find fewer opportunities.

For example, 71% of your trades would have been profitable and your average profit per trade would have been 11.38% if you had only bought stocks that were 20% below their 6 day moving average during the sample period.

The problem is that of the 333 possible trades using the above strategy, 291 of them came in 2008 or 2009 alone.

As you can see from the following equity graph, buying deeply oversold stocks was a great strategy during the financial crisis of 2008/09, but for the past 7 years there have been just a handful of stocks that have ever triggered a signal when the stock is at least 20% beneath the 6 day MA.



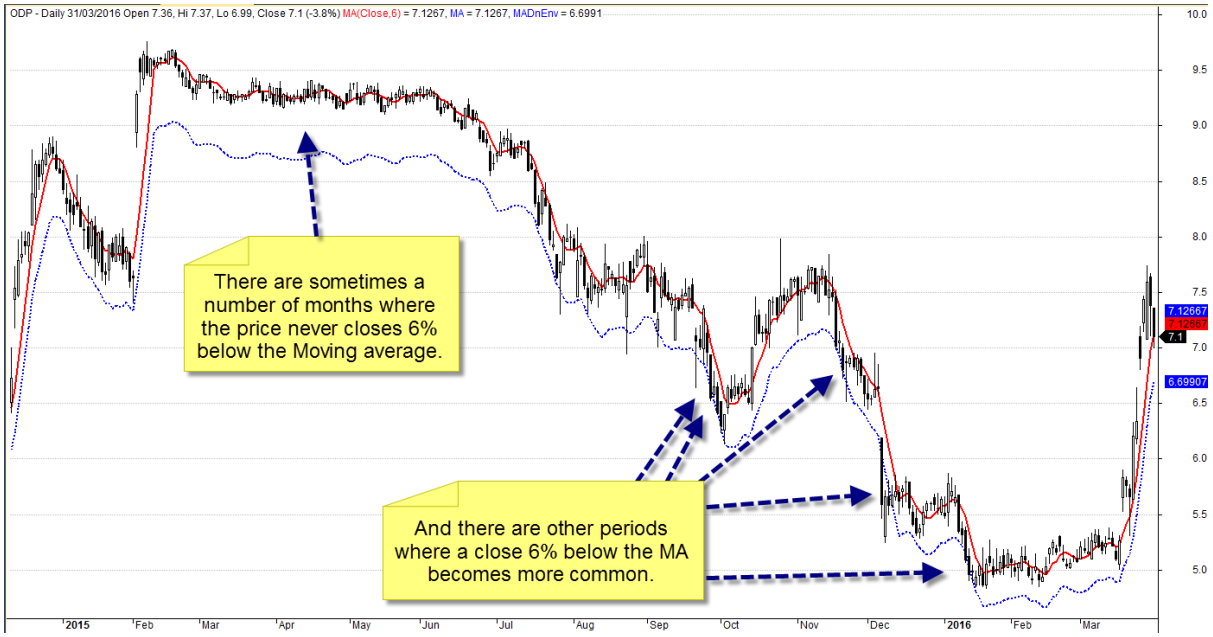
This leads us to the percent-rank indicator and how it can improve our strategy.

Basically, instead of using a fixed percentile to determine how far below a moving average we need a stock to close before giving a signal, we instead use a percent rank indicator to determine how far below the moving average we require a stock to close before providing a signal.

Perhaps a little explanation of the Percent-Rank indicator is required;

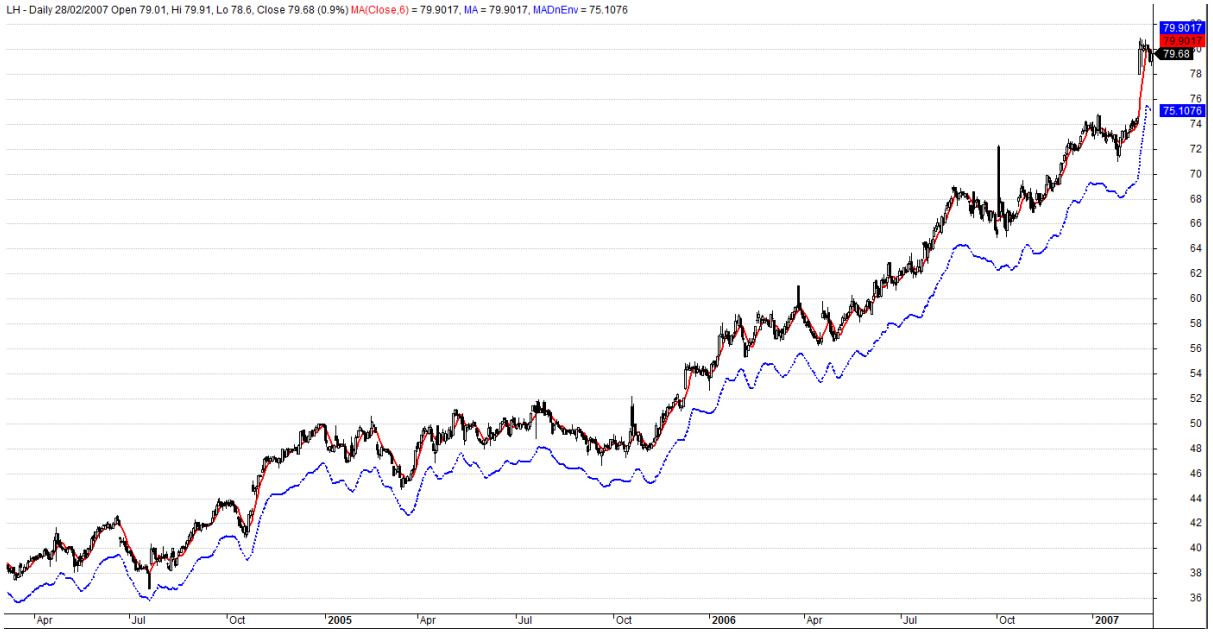
The following chart plots the 6 day moving average on the price series (the red line) and the dashed blue line plots the value of the 6 day MA minus 6%.

Note that during certain periods a stock will be more volatile than during other periods.



Furthermore, some stocks might frequently close 6% below the moving average whereas other less volatile stocks might rarely close 6% below the moving average.

For example, we can see from the following $LH chart that certain stocks might trade for years without ever closing 6% below the value of the 6 day MA.



By using a Percent-Rank indicator we can normalise how far below the moving average we require a stock to close before issuing a signal.

For example, suppose that we use 252 days to calculate the percent rank of how far above or below a moving average that the price has closed on any given day.

If over the past 252 days the farthest that a stock has closed *below* the moving average is 4%, the MA snap-back percent rank on that day would be 100.

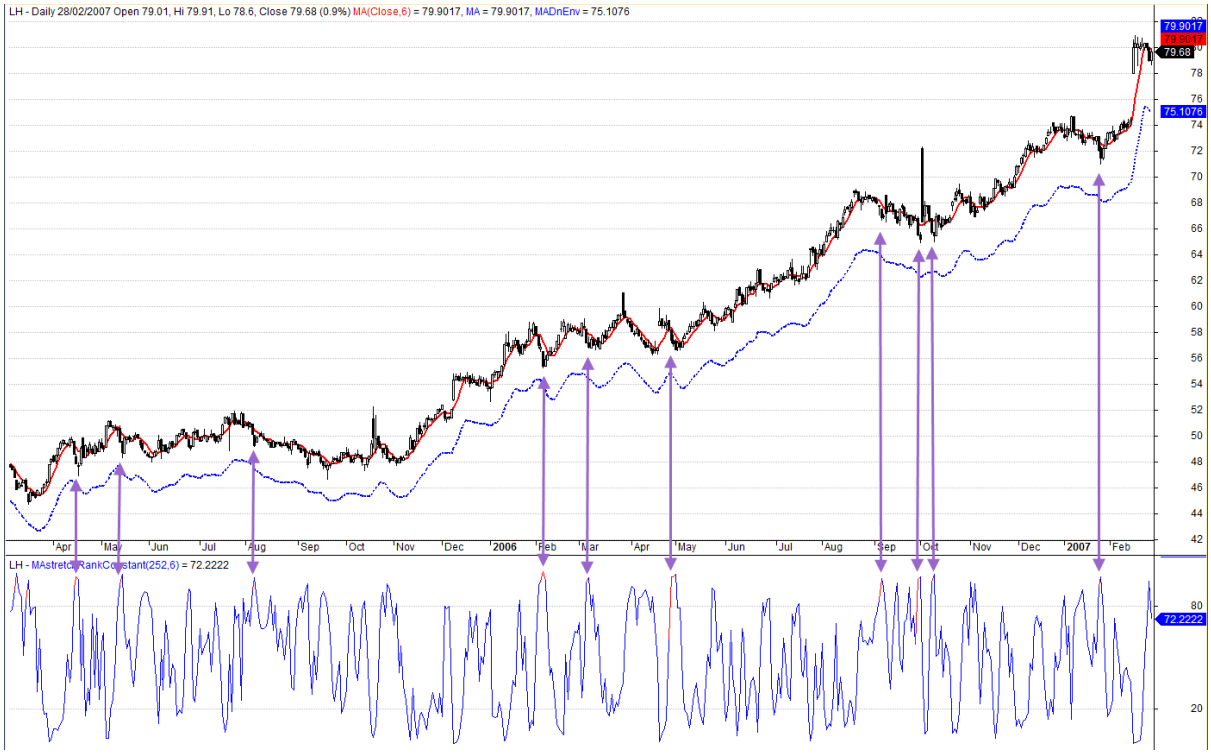
If the farthest that a stock has closed *above* the moving average is 20%, the MA snap-back percent rank on that day would be 0.

All other values would each contribute 0.397% to the entire data-set (1/252 = 0.00397). For example, a value that is the second highest of the data set would have a percent rank of 99.603%, and so on.

The following $LH chart is from the same period as above except that I have added the MA snap-back percent rank indicator beneath the price series.

To calculate the MA snap-back percent-rank indicator I have used 252 days and we are measuring the percentile difference between the closing price and the moving average.

A value of 100 indicates that the current close is the farthest percentile **below** the moving average that the price has been during the past 252 days.



Note that I have highlighted wherever the MA Snap-Back Percent-Rank indicator is above 95.

Put simply, if the percent-rank indicator is above 95, the stock has closed a percentile lower than the moving average which is greater than 95% of all other percentile closes below the moving average during the past 252 days.

Remember, if our signal was a close 6% below the moving average, we wouldn't have gotten a signal in $LH during the entire period, but when using the MA snap-back percent rank indicator we get many signals, most of which were profitable.

6 Day MA Snap-Back Percent Rank Average Results

For this example, the strategy is to simply buy the next day open if the 6 day MA Snap-Back Percent rank indicator (252 days) is equal to OR above *X*.

The following table presents the average performance metrics if **all** signals were traded during the sample period.

Exit open positions if the close is above the previous value of the 6 day MA.

Here are the results:

6 Day MA Snap-Back Percent-Rank	# of Trades	Avg % P/L Per Trade	Avg Bars Held	% of Winners	Profit Factor
>= 80	59832	0.36	5.46	66.60	1.24
>= 82.5	55034	0.37	5.53	66.39	1.24
>= 85	49179	0.38	5.61	66.25	1.25
>= 87.5	43942	0.42	5.64	66.21	1.26
>= 90	38271	0.46	5.71	66.15	1.28
>= 92.5	30897	0.51	5.8	66.16	1.3
>= 95	23612	0.60	5.9	65.74	1.33
>= 97.5	15184	0.79	6.03	65.13	1.41

Note that as we increase the Percent Rank value required to trigger a signal, we increase the average P/L % produced by each trade. This is the relationship that we expect from a useful technical indicator.

The following table also presents the average performance of each signal from the sample period if entering on a limit order that is good for one day and that is placed between 0.25 and 3 times the ATR(5) value below the low of the signal bar.

Note that the results below were found if the signal was a 6 day MA snap-back percent rank equal to or greater than 80.

System Parameters	# of Trades	Avg % P/L Per Trade	Avg Bars Held	% of Winners	Profit Factor
Baseline System	59832	0.36%	5.46	66.60%	1.24
Limit Order at low of Signal Bar	46803	0.54%	5.82	67.53	1.35
Limit Order 0.25 * ATR(5) below low of Signal Bar	37777	0.66%	6.04	67.78	1.41
Limit Order 0.50 * ATR(5) below low of Signal Bar	27813	0.73%	6.29	67.73	1.44
Limit Order 0.75 * ATR(5) below low of Signal Bar	18993	0.83%	6.53	67.42	1.47
Limit Order 1.00 * ATR(5) below low of Signal Bar	12085	0.95%	6.83	66.28	1.51
Limit Order 1.25 * ATR(5) below low of Signal Bar	7534	1.18%	6.85	64.87	1.61
Limit Order 1.50 * ATR(5) below low of Signal Bar	4841	1.58%	6.95	65.94	1.82
Limit Order 1.75 * ATR(5) below low of Signal Bar	3204	2.14%	6.98	66.89	2.12
Limit Order 2.00 * ATR(5) below low of Signal Bar	2198	2.98%	6.98	68.97	2.62
Limit Order 2.25 * ATR(5) below low of Signal Bar	1596	3.02%	6.92	70.11	2.73
Limit Order 2.50 * ATR(5) below low of Signal Bar	1181	3.37%	6.89	70.79	3.03
Limit Order 2.75 * ATR(5) below low of Signal Bar	934	3.83%	6.92	72.38	3.48
Limit Order 3.00 * ATR(5) below low of Signal Bar	755	3.99%	6.99	73.38	3.53

The above table illustrates that if you are patient enough to only buy on a limit order that is at least 1.5 *ATR below the low of the signal bar, you can significantly improve the average % profit per trade.

6 Day MA Snap-Back Percent Rank Portfolio Results

For the next test I applied the portfolio management rules. Only 5 open positions were allowed at a time and 20% of available equity was allocated to each new position.

Note that the following results were produced if the signal is a 6 day MA snap-back percent rank value equal to or greater than 90.

As with the previous strategy, I have applied a filter which only permits us to trade a stock if the 100 day ROC% is positive on the day of the signal.

Because the MA snap-back PR strategy produces so many signals the portfolio management strategy is to place a limit order that is 0.25 * ATR(5) below the low of the signal bar.

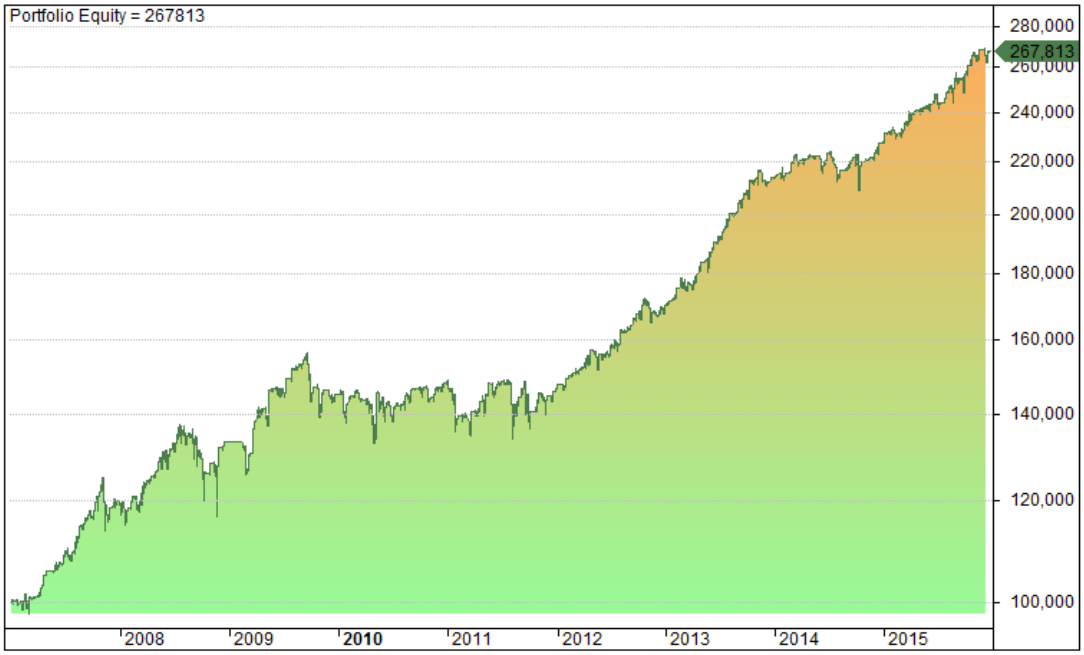
Only one limit order is placed per day for the stock which has the highest 100 day ROC% on the day of the signal.

Exit any open positions if the close is above the value of the previous 6 day MA OR you've held the position for 10 days.

The results produced by this test are as follows:

- Trades = **558**
- Average P/L % per trade = **0.92%**
- Average Win-Rate % = **69.89%**
- Average Bars Held = **5**
- Average Exposure = **23.90%**
- Average CAR = **11.57%**
- Average MDD = **(-15.27%)**

Beneath you will find a typical equity curve that was produced during the sample period, as well as a monthly breakdown of returns…



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr%	MDD%
2007	-0.1%	-0.2%	1.3%	3.8%	1.8%	1.6%	0.7%	4.9%	1.5%	6.1%	-4.0%	1.0%	19.6%	-9.0%
2008	-1.3%	0.1%	3.7%	1.8%	3.8%	2.7%	1.4%	-0.1%	-3.2%	-1.9%	2.9%	1.1%	11.3%	-15.3%
2009	0.0%	-3.3%	7.4%	2.2%	3.7%	0.0%	1.2%	3.1%	-2.8%	-6.3%	5.0%	-0.6%	9.0%	-10.8%
2010	-5.1%	4.9%	-0.6%	-5.4%	5.7%	-3.1%	2.4%	0.8%	2.0%	-1.2%	0.9%	1.3%	1.8%	-9.1%
2011	-6.6%	0.9%	0.9%	2.9%	2.3%	0.2%	-0.0%	-2.8%	-4.2%	3.4%	1.2%	1.3%	-0.9%	-10.1%
2012	0.4%	2.6%	0.8%	3.2%	-1.2%	2.2%	0.1%	2.7%	2.8%	1.6%	-1.3%	1.0%	15.7%	-4.2%
2013	1.6%	2.7%	-0.2%	2.5%	2.4%	3.6%	3.0%	1.7%	3.0%	2.9%	-0.1%	0.3%	25.9%	-2.8%
2014	1.8%	0.2%	1.1%	1.1%	-0.4%	0.5%	-4.1%	1.4%	1.3%	0.3%	0.5%	2.7%	6.5%	-6.7%
2015	1.9%	-0.3%	3.9%	0.3%	0.4%	2.0%	0.7%	2.6%	-0.2%	4.9%	0.6%	-0.2%	17.9%	-3.6%
Avg	-0.8%	0.8%	2.0%	1.4%	2.0%	1.1%	0.6%	1.6%	0.0%	1.1%	0.6%	0.9%		

Final 6 Day MA Snap-Back Percent Rank Strategy Rules

1. 100 Day ROC % > 0
2. SnapBack Percent Rank Value >= 90.
3. When the above rules are met, identify whichever stock has the highest 100 day ROC% and place a limit order to buy 0.25 * ATR(5) below the low of the signal bar.
4. Exit open positions if the close is greater than the previous 6 day MA value OR you've held the position for 10 days.

Strategy 3 – Cumulative Low IBS

The next strategy looks to exploit the tendency of stocks to stage a short-term rally if the previous close is very near to the low of the day.

To calculate how near the closing price is to the low price, we can use an indicator called the Internal Bar Strength (IBS) indicator.

The next chart has the IBS indicator plotted beneath the price series. Note that the nearer the closing price is to the low price, the lower the value of the IBS.

Low IBS Strategy Average Results

The following table presents the average performance metrics if all signals were traded during the sample period.

The strategy is to simply buy at the open of the next day if the IBS value is below *X*.

Exit positions if the closing price is greater than the highest high of the previous 5 days.

Here are the results:

IBS Value	# of Trades	Avg % P/L Per Trade	Avg Bars Held	% of Winners	Profit Factor
< 25	67278	0.61	11.05	70.40	1.33
< 24	66516	0.62	11.07	70.38	1.34
< 23	65616	0.62	11.09	70.33	1.34
< 22	64686	0.63	11.11	70.30	1.34
< 21	63672	0.63	11.13	70.25	1.34
< 20	62615	0.64	11.15	70.21	1.35
< 19	61481	0.65	11.17	70.18	1.35
< 18	60351	0.66	11.19	70.20	1.35
< 17	59122	0.67	11.21	70.26	1.36
< 16	57733	0.67	11.24	70.21	1.36
< 15	56304	0.68	11.28	70.13	1.36
< 14	54836	0.69	11.3	70.17	1.37
< 13	53093	0.70	11.33	70.19	1.37
< 12	51323	0.73	11.31	70.28	1.38
< 11	49346	0.75	11.32	70.35	1.4
< 10	47172	0.78	11.34	70.46	1.41
< 9	44720	0.79	11.37	70.47	1.42
< 8	42121	0.82	11.39	70.61	1.43
< 7	39177	0.86	11.35	70.76	1.45
< 6	35936	0.91	11.33	70.99	1.48
< 5	32304	0.91	11.37	71.11	1.48
< 4	28226	0.92	11.45	71.05	1.49
< 3	23859	1.01	11.32	71.61	1.54
< 2	18903	1.08	11.35	72.07	1.58
< 1	13836	1.11	11.28	72.59	1.59

The above table illustrates that buying stocks with a low IBS value has been a profitable mean-reversion strategy during the sample period.

However, if you have tested the above strategy for yourself then you will have noticed that the Low IBS strategy might not exactly be identifying stocks that are currently below the "mean".

For example, many stocks with a low IBS reading might be trading **above** the mean:

Seeing that we want to exploit mean-reversion, we can apply a further filter to the strategy which only permits a trade if the signal day is below the *X* period moving average.

For example, the following trades were produced if the signal days were below the 5 period MA (the red line):

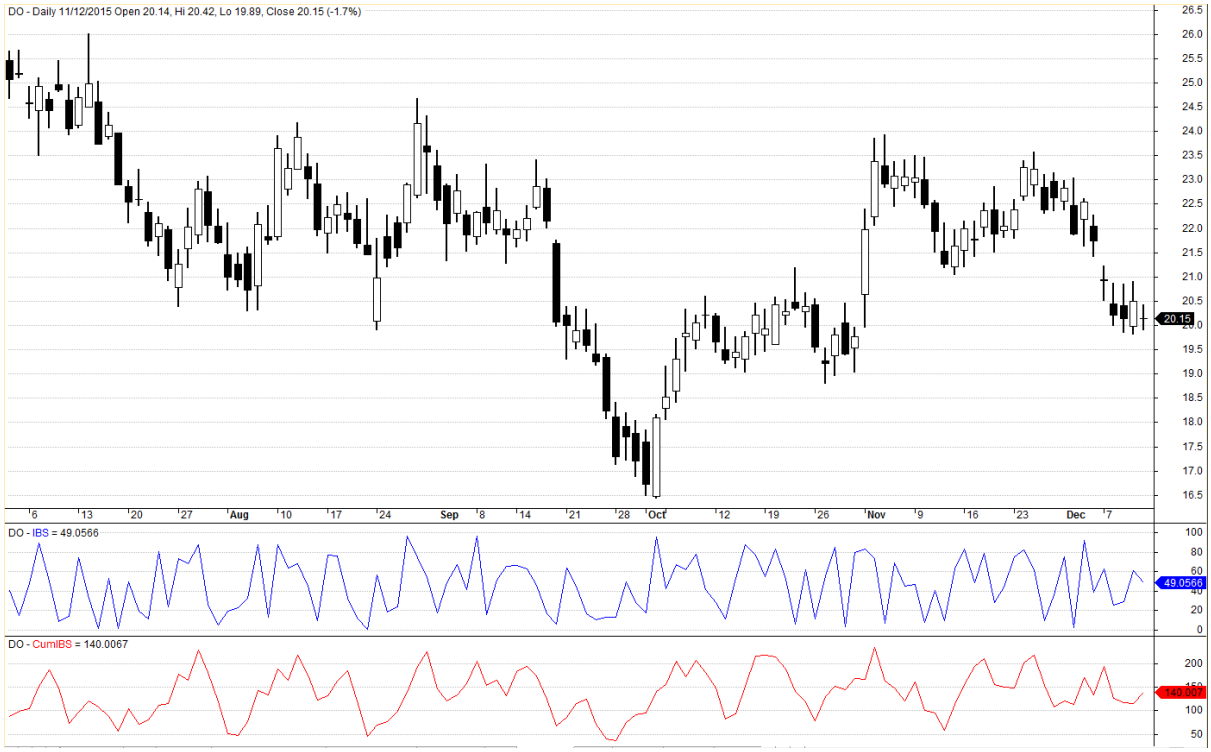
Another method which improves the performance of the low IBS strategy is to only search for signals if they correspond with *X* day lows.

For example, we might only trade Low IBS days if the closing price is lower than the lowest low price of the prior 10 days:

The point is that you can improve the IBS strategy by only trading signals that occur nearer to recent lows as opposed to recent highs. How you define that the price is nearer to recent lows than it is to recent highs is of less importance.

To apply the IBS concept further, we can sum the total IBS values of the past *X* days and create a cumulative IBS indicator.

For example, the following chart plots the IBS indicator (blue line) and the 3 day Cumulative IBS indicator (red line) beneath the price series.



The formula for calculating the Cumulative IBS indicator is as follows:

SUM (IBS, *X*);

Where *X* = the number of days.

The following test results were produced if using between 1 and 5 days to calculate the value of the Cumulative IBS indicator.

Trades were entered on open of day following the signal.

Exit positions if closing price is greater than previous 5 day high.

Note:

If X = 1, the signal was an IBS value < 10.

If X = 2, the signal was a Cumulative IBS value < 20.

If X = 3, the signal was a Cumulative IBS value < 30.

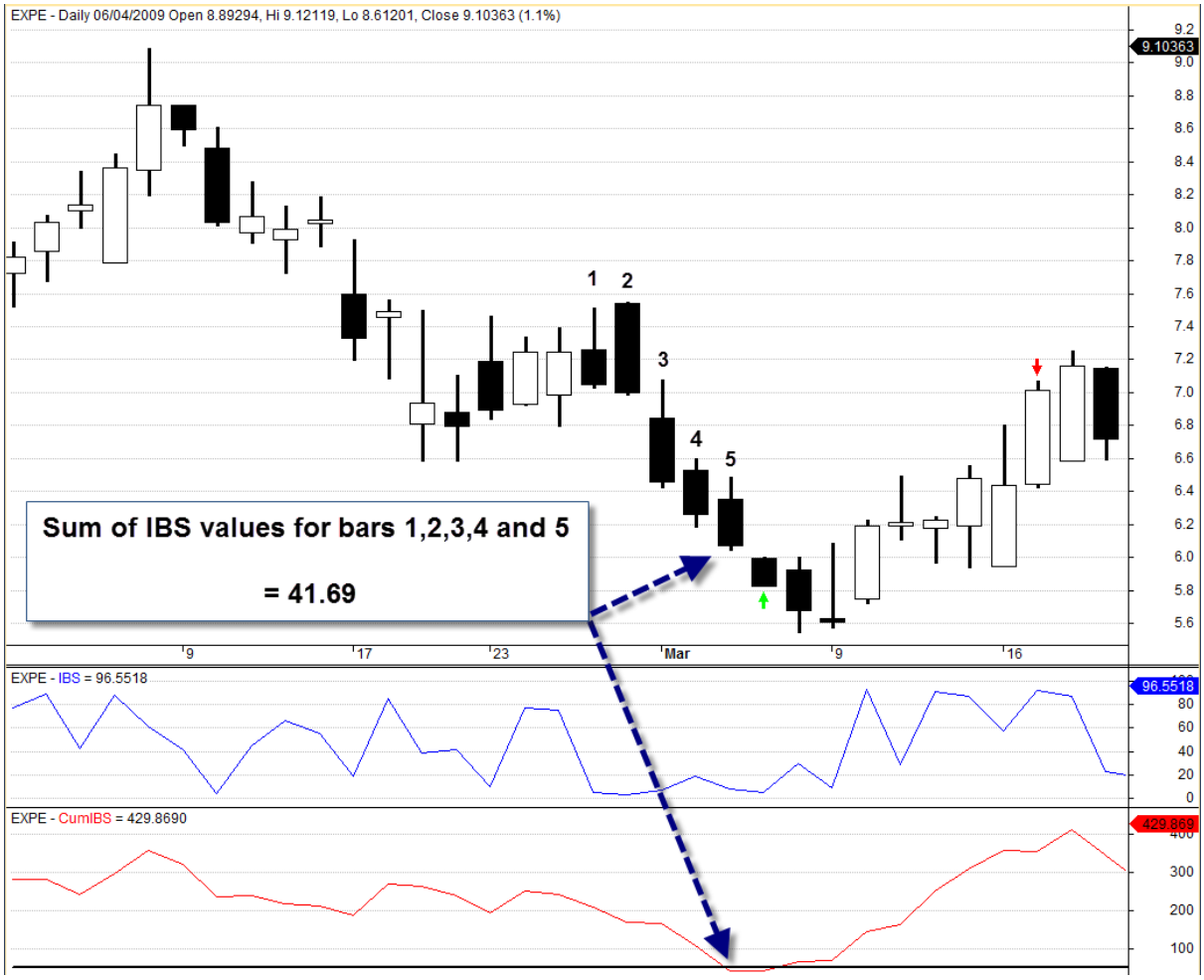
And so on…

Cumulative Low IBS Strategy Average Results

X Day Cumulative IBS Value	# of Trades	Avg % P/L Per Trade	Avg Bars Held	% of Winners	Profit Factor
X = 1	47172	0.78	11.34	70.46	1.41
X = 2	15425	1.03	11.97	71.44	1.5
X = 3	4159	1.41	11.73	74.06	1.74
X = 4	1191	1.55	11.82	74.81	1.82
X = 5	349	2.76	11.15	78.22	3.4

The above table illustrates that identifying consecutive low IBS values was a high win-rate strategy during the sample period.

For example, the following chart plots the 5 day Cumulative IBS indicator in the lower pane. The signal is provided by a 5 day Cumulative IBS value that is below 50 (the horizontal black line).



The problem with identifying a signal as a 5 day Cumulative IBS value being less than 50, is that doing so produces a very limited number of opportunities.

Cumulative Low IBS Strategy Portfolio Results

For the next test I applied the portfolio management rules. Only 5 open positions were allowed at a time and 20% of available equity was allocated to each new position.

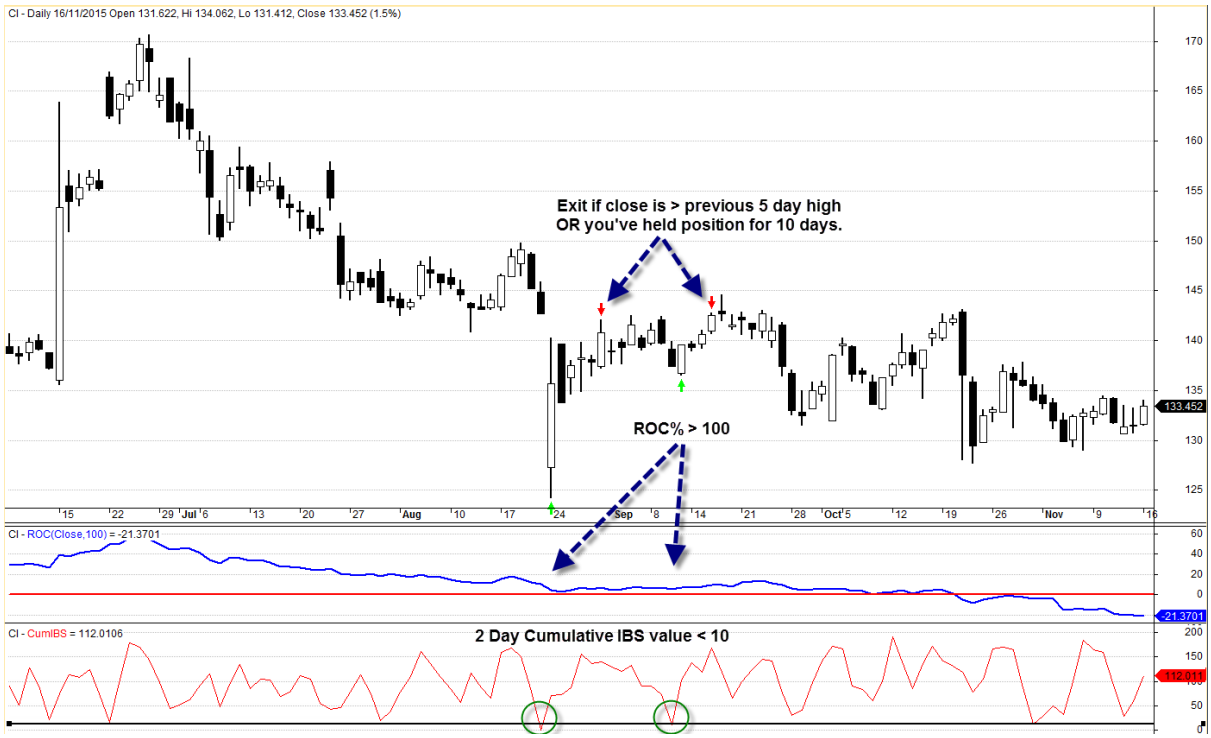
In order to discover a reasonable number of opportunities, the following results were produced if the signal is a **2 day cumulative IBS value that is less than 10**. The stock must also be trading beneath the 5 day moving average.

As with the previous strategies, I have applied a filter which only permits us to trade a stock if the 100 day ROC% is positive on the day of the signal.

When multiple signals are found market on open orders are placed for the stocks with the highest 100 day ROC%.

Exit positions if the close is above the value of previous 5 day high OR you've held the position for 10 days.

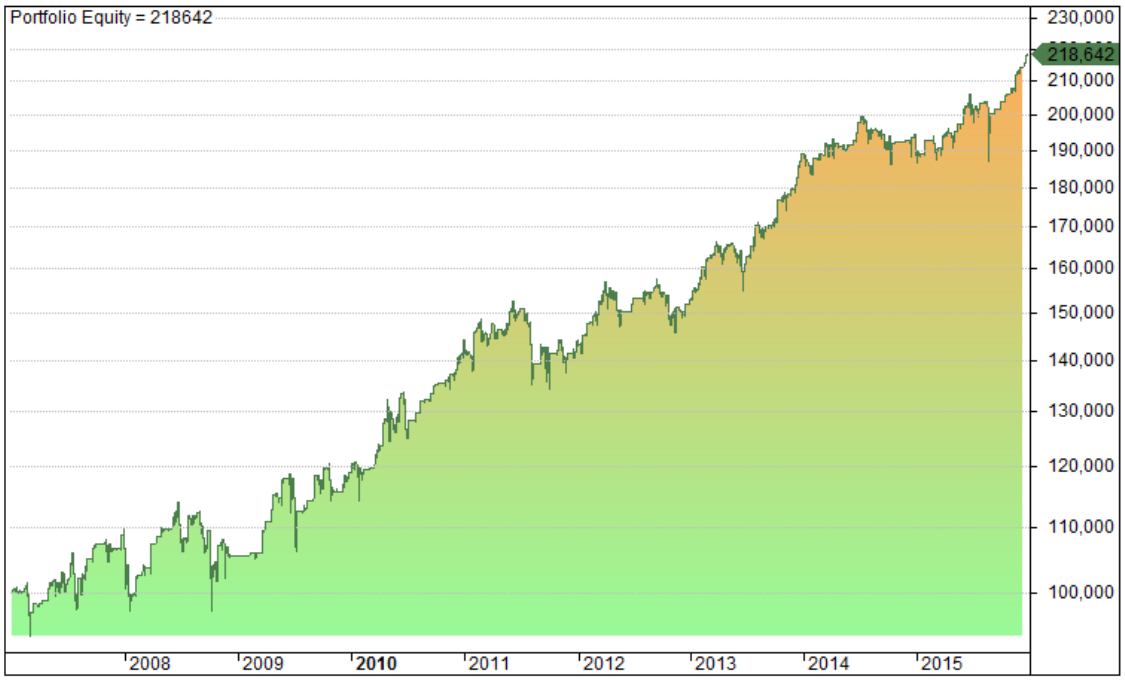
For example, the following chart shows 2 trades that were executed in $CI during 2015:



The results of the test were as follows:

- Trades = **952**
- Average P/L % per trade = **0.43%**
- Average Win-Rate % = **67.23%**
- Average Bars Held = **4**
- Average Exposure = **28.95%**
- Average CAR = **9.08%**
- Average MDD = **(-14.58%)**

Beneath you will find the equity curve that was produced during the sample period, as well as a monthly breakdown of returns…



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr%	MDD%
2007	0.3%	-0.8%	-1.6%	0.7%	2.7%	-0.2%	-2.9%	5.7%	3.0%	1.0%	-1.3%	3.0%	9.7%	-7.9%
2008	-9.0%	2.6%	1.4%	4.6%	0.8%	0.7%	0.9%	0.9%	-2.5%	-2.2%	-0.4%	-1.2%	-4.0%	-14.6%
2009	0.0%	0.3%	3.8%	5.0%	1.7%	0.5%	-4.8%	1.9%	2.7%	-1.9%	0.6%	2.7%	12.8%	-10.5%
2010	-4.1%	4.8%	2.4%	7.8%	-3.2%	-2.2%	2.7%	3.0%	2.2%	0.2%	0.6%	3.3%	18.2%	-6.6%
2011	-1.7%	6.3%	0.4%	-0.6%	2.6%	0.3%	-2.1%	-5.6%	-1.3%	3.3%	-1.2%	2.0%	1.7%	-12.1%
2012	1.5%	3.4%	4.4%	-1.5%	-2.6%	1.9%	0.0%	1.0%	-0.7%	-4.2%	2.3%	1.4%	6.8%	-7.4%
2013	2.4%	3.4%	2.9%	-1.0%	-1.3%	-1.1%	3.9%	1.1%	0.7%	4.7%	0.9%	5.3%	23.7%	-6.9%
2014	-1.7%	1.5%	1.5%	-0.1%	0.1%	2.7%	-2.4%	2.0%	-2.8%	1.1%	0.2%	-0.3%	1.6%	-6.7%
2015	-0.8%	1.1%	0.7%	-1.6%	3.4%	2.7%	0.5%	-1.5%	1.0%	2.1%	2.9%	2.8%	13.8%	-9.3%
Avg	-1.5%	2.5%	1.8%	1.5%	0.5%	0.6%	-0.5%	0.9%	0.3%	0.4%	0.5%	2.1%		

Final 2 Day Cumulative Low IBS Strategy Rules

1. 100 Day ROC % > 0.
2. 2 Day Cumulative IBS Value < 10 and Close < 5 Day MA.
3. When above rules are met, place market on open orders for the stocks with the highest 100 day ROC%.
4. Exit open positions if the close is greater than the previous 5 day MA OR you've held the position for 10 days.

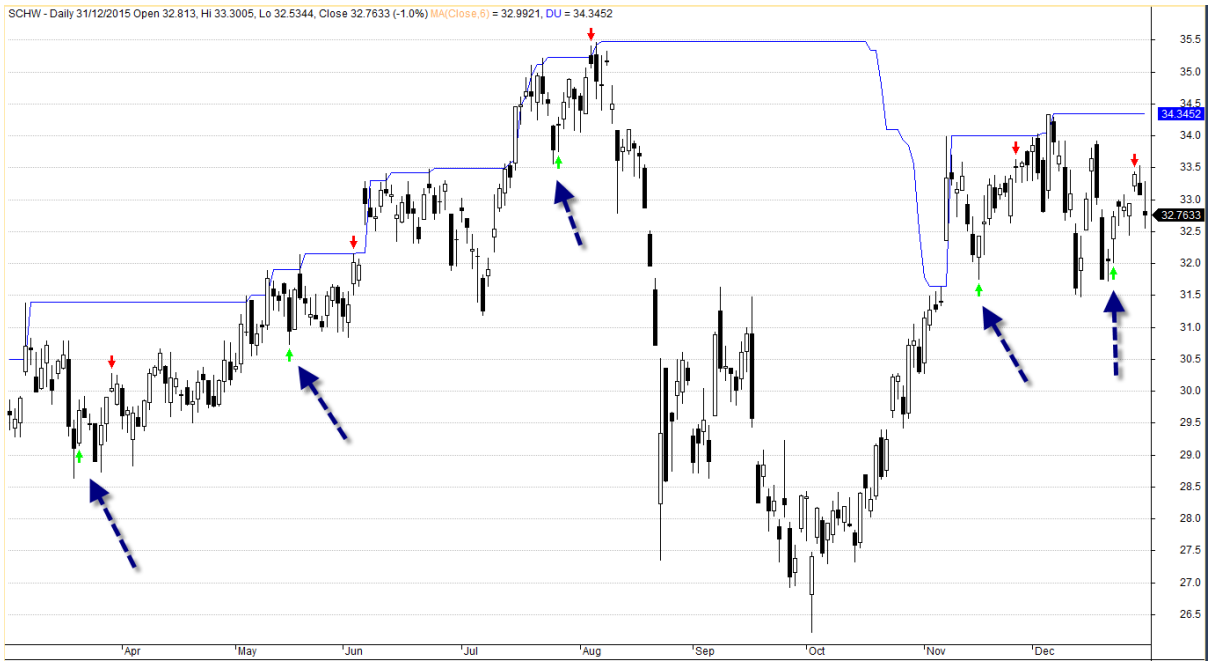
Strategy 4 – New High Pull-backs

The next strategy seeks out stocks that have recently closed at a new *X* day high but have subsequently pulled back in price for a few days.

The first component of the strategy is to therefore to identify a new *X* day high.

The second component of the strategy is to identify a pullback.

For the following example the strategy was to identify any stock that had made a new 50 day high (the blue line) within the past 10 days and also produced a 2 CNLDD signal:



NH Pull-Back Strategy Average Results

The following table presents the average performance metrics if all signals were traded during the sample period.

The parameters tested are new *X* Day Highs and *Y* CNLDD. The CNLDD signal must have been produced **within 10 days** of the new high.

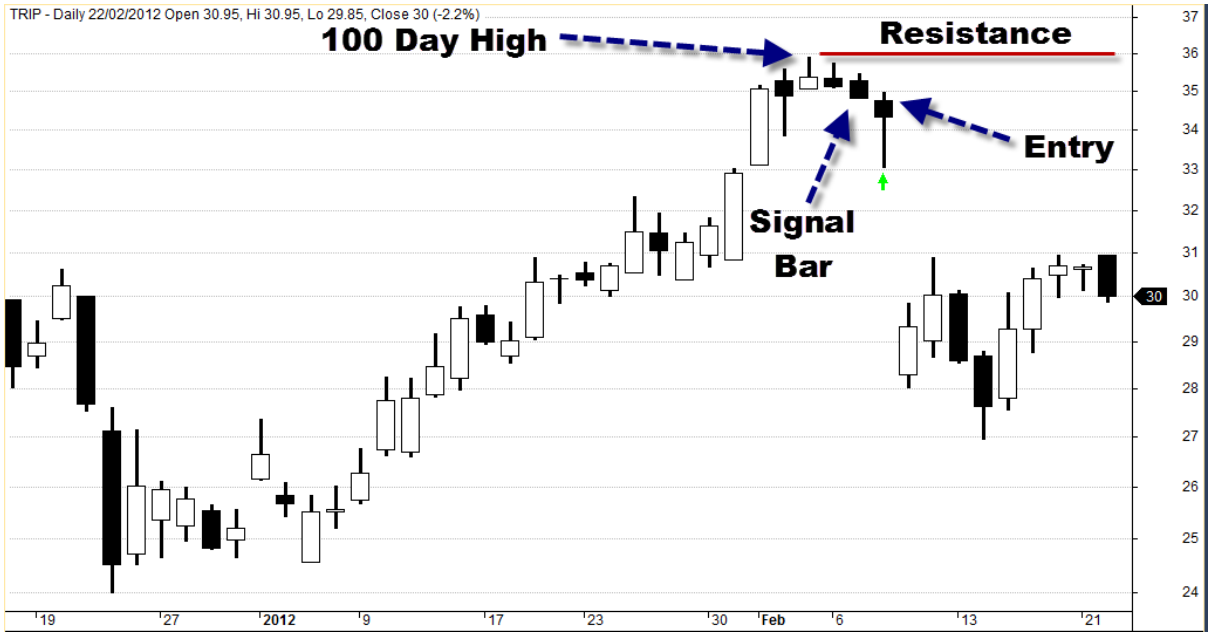
Exit open positions once the closing price is above the previous 5 day high.

Here are the results:

X Day High, *Y* CNLDD	# of Trades	Avg % P/L Per Trade	Avg Bars Held	% of Winners	Profit Factor
X = 25, Y = 2	19110	0.77	11.87	70.08	1.45
X = 25, Y = 3	7665	0.96	12.08	70.74	1.5
X = 50, Y = 2	14326	0.77	11.97	69.85	1.48
X = 50, Y = 3	5609	1.02	12.05	70.94	1.66
X = 75, Y = 2	12190	0.80	11.98	70.31	1.53
X = 75, Y = 3	4084	1.08	12.18	71.17	1.75
X = 100, Y = 2	11129	0.86	11.94	70.51	1.61
X = 100, Y = 3	4391	1.10	12.16	71.28	1.8

To improve the strategy yet further we will only consider stocks which are not trading too close to the resistance formed by the recent highs.

Note from the following example that TRIP produced a valid signal, but with the recent high now acting as potential resistance the prudent course of action would have been to wait for a deeper pullback.

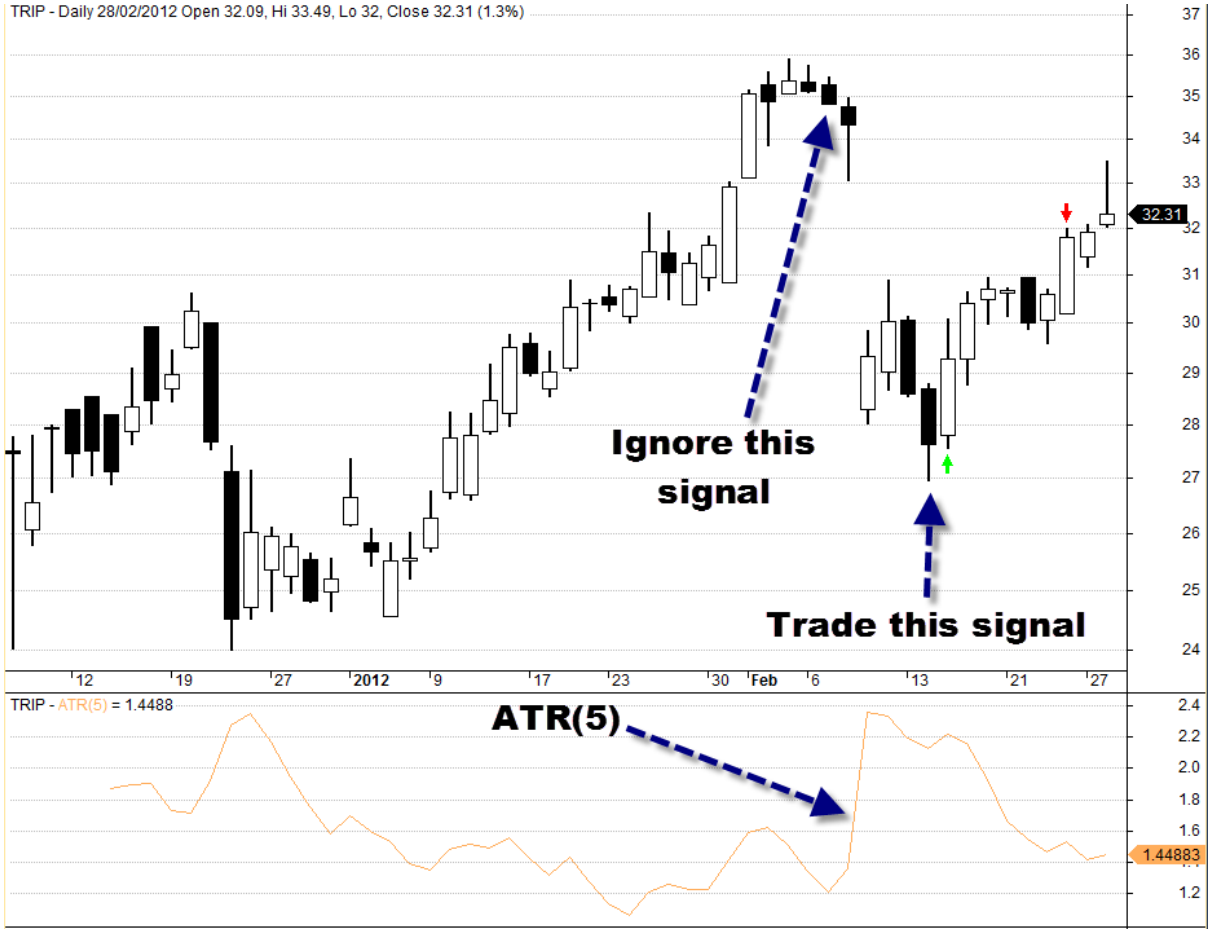


To help avoid buying stocks that are trading close to resistance we will simply ignore all signals where the close is greater than the value of: (the recent 100 day high minus the value of 1 * ATR(5)).

For example, in the following chart we can see that TRIP produced a valid signal on the 7th February. However, on the day of the signal the ATR value was $1.21 and the most recent high was $35.93.

The signal would therefore only have been valid if the closing price was less than ($35.93 - $1.21) $34.72.

Because the closing price on the day of the signal was greater than $34.72 we would have not placed an order until the second signal which occurred on the 14th Feb.



NH Pull-Back Strategy Portfolio Results

For the next test I applied the portfolio management rules. Only 5 open positions were allowed at a time and 20% of available equity was allocated to each new position.

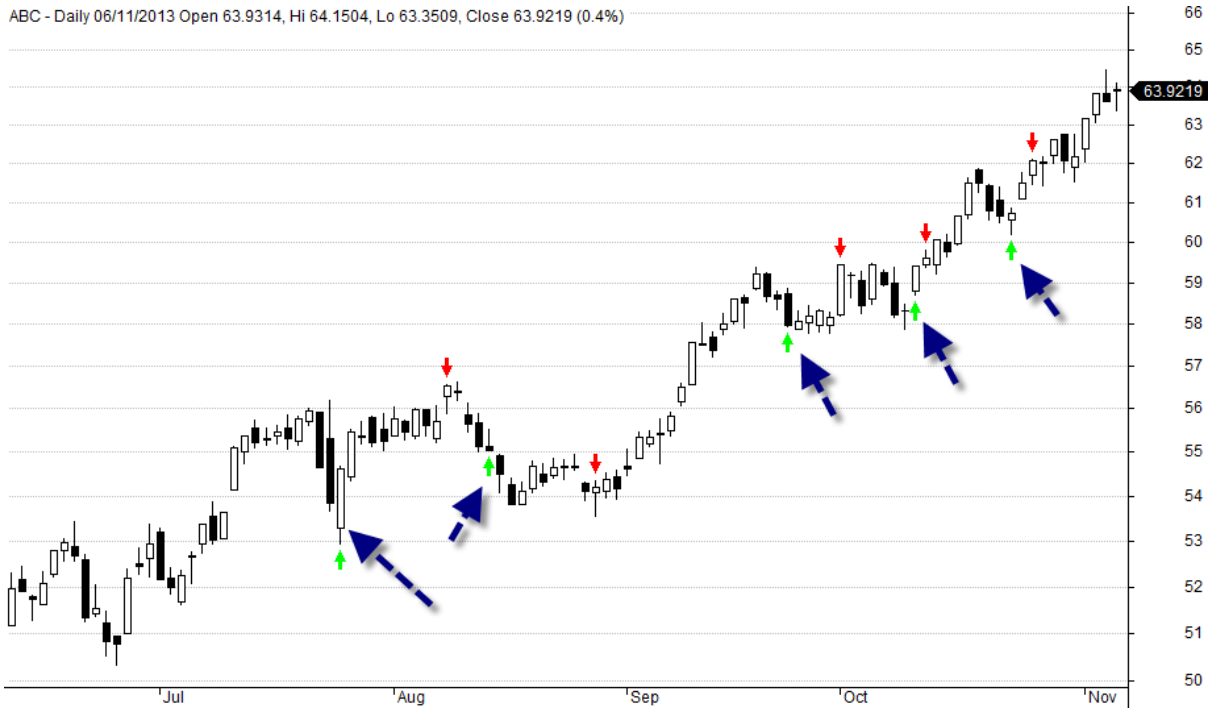
In order to discover a reasonable number of opportunities, the following results were produced if the signal is a 2 CNLDD signal being found within 10 days of a new 100 day high.

The closing price on the day of the signal must also be less than the value of the recent 100 day high minus 1 * ATR(5).

Whenever there are multiple signals, market on open orders are placed for the stocks with the highest 100 day ROC% first.

Exit positions if the closing price is above the value of previous 5 day high OR you've held the position for 10 days.

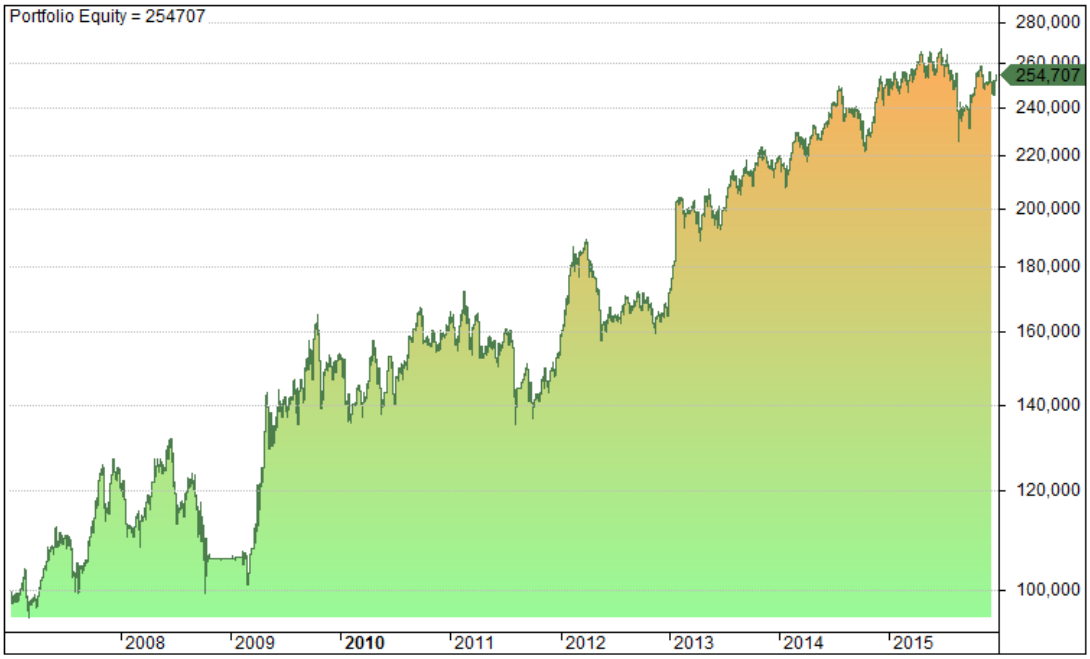
For example, the following chart shows 5 trades that were executed in $ABC during 2013:



The test results during the sample period were as follows:

- Trades = **1138**
- Average P/L % per trade = **0.47%**
- Average Win-Rate % = **62.92%**
- Average Bars Held = **8**
- Average Exposure = **75.48%**
- Average CAR = **10.95%**
- Average MDD = **(-24.49%)**

Beneath you will find the equity curve that was produced during the sample period, as well as a monthly breakdown of returns…



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr%	MDD%
2007	0.0%	0.0%	-2.0%	7.4%	6.4%	-0.9%	-6.7%	1.6%	7.2%	11.5%	-1.5%	0.1%	**24.0%**	**-11.3%**
2008	-8.4%	1.3%	0.8%	7.1%	1.5%	-3.2%	-4.5%	5.8%	-6.3%	-7.3%	-0.0%	0.1%	**-13.7%**	**-24.5%**
2009	0.2%	-2.8%	7.9%	25.7%	-5.9%	6.9%	1.8%	0.6%	7.0%	-9.8%	7.7%	1.4%	**43.4%**	**-15.5%**
2010	-10.7%	3.3%	1.0%	8.2%	-6.6%	-1.0%	4.4%	6.2%	4.4%	-4.8%	-0.7%	3.2%	**5.3%**	**-12.5%**
2011	-1.9%	6.4%	-2.2%	-5.3%	1.7%	0.6%	-1.7%	-5.9%	-4.0%	1.8%	4.0%	2.9%	**-4.3%**	**-21.6%**
2012	10.0%	7.2%	4.5%	-6.8%	-7.8%	0.5%	2.8%	-0.3%	-0.2%	0.7%	-1.8%	2.6%	**10.4%**	**-16.7%**
2013	19.6%	-2.4%	2.7%	-2.6%	-0.3%	0.7%	6.6%	-1.4%	1.7%	3.7%	-1.5%	1.2%	**29.5%**	**-7.7%**
2014	-1.5%	5.3%	-1.1%	3.4%	-0.6%	3.2%	1.7%	-1.0%	-1.1%	-3.8%	8.9%	-0.2%	**13.4%**	**-11.1%**
2015	0.2%	1.9%	0.9%	0.4%	0.6%	1.1%	-3.1%	-5.1%	-1.2%	8.2%	-2.5%	1.6%	**2.5%**	**-15.5%**
Avg	**0.8%**	**2.3%**	**1.4%**	**4.2%**	**-1.2%**	**0.9%**	**0.1%**	**0.1%**	**0.8%**	**0.0%**	**1.4%**	**1.4%**		

Final NH Pull-Back Strategy Rules

1. Stock closed at a 100 day high within the past 10 days.
2. 2 consecutive days which close lower than the open and have a low less than the previous day's low.
3. The closing price on the day of the signal must also be less than the value of the recent 100 day high minus 1 * ATR(5).
4. When the above rules are met, place a limit order that is *X* * ATR(5) below the low of the signal bar OR an order to buy at the next open.
5. Exit open positions if the closing price is greater than the previous 5 day high OR you've held the position for 10 days.

Strategy 5 – RSI 2 with a Twist

The final strategy looks for stocks that are oversold according to a 2-period RSI. However, we'll apply a twist to a standard RSI strategy to make it more profitable.

To begin, a standard RSI(2) strategy involves buying a stock when the RSI(2) crosses below *X*.

For example, the following chart plots the RSI(2) beneath the price series and the signal to enter a trade is simply an RSI(2) crossing beneath 5 (the red line).

2 Period RSI Cross-under Average Results

The following table presents the average performance metrics if all signals were traded during the sample period.

The strategy is to simply buy the next day open if RSI(2) crosses below *X*.

Exit open positions if the close is above the previous day's high.

Here are the results:

RSI(2) Crosses Below X	# of Trades	Avg % P/L Per Trade	Avg Bars Held	% of Winners	Profit Factor
X = 25	83474	0.29	4.95	65.25	1.21
X = 22.5	78553	0.31	4.97	65.41	1.22
X = 20	73140	0.31	4.98	65.46	1.22
X = 17.5	67343	0.32	4.96	65.68	1.22
X = 15	60954	0.33	4.91	65.79	1.23
X = 12.5	53771	0.34	4.95	66.01	1.24
X = 10	45748	0.35	4.99	66.13	1.25
X = 7.5	36800	0.39	4.94	66.30	1.26
X = 5	26517	0.45	4.96	66.43	1.29
X = 2.5	14456	0.51	4.97	66.43	1.32

The above table illustrates that a low RSI(2) reading can provide profitable trading opportunities.

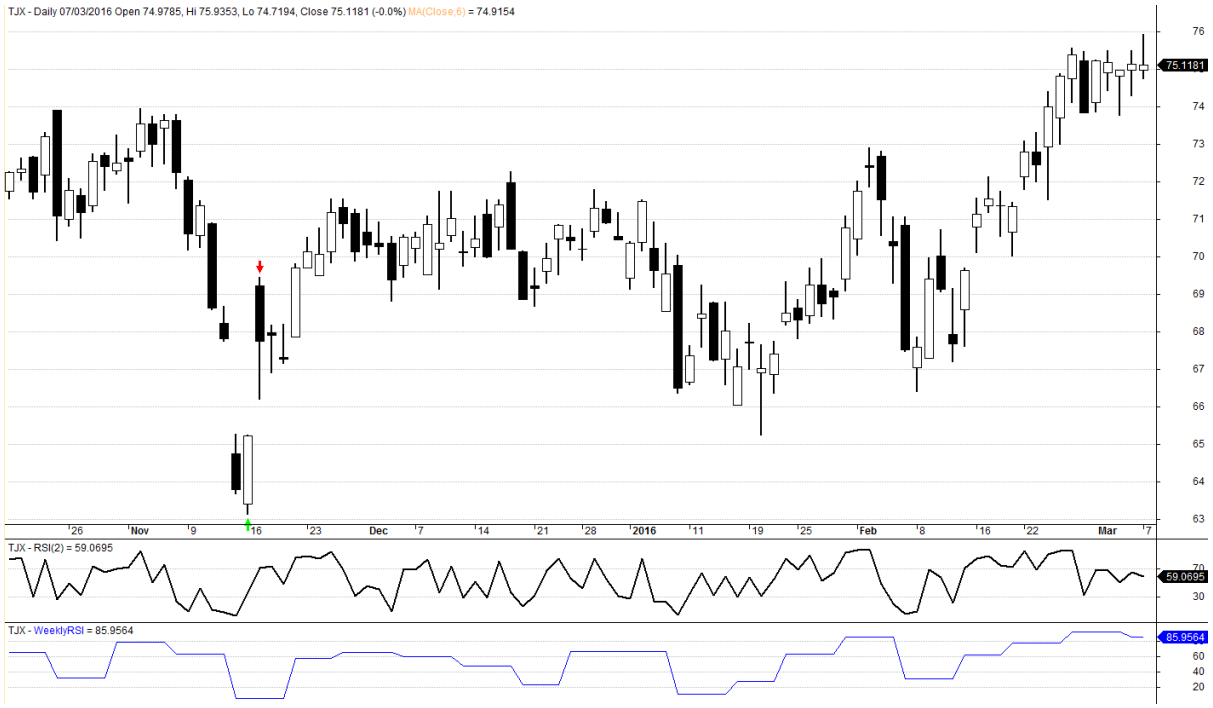
With that said, I'm sure that many of you are already familiar with the above strategy because it was popularized by Larry Connors and is widely available on the internet.

The next modification is less well-known but does a great job at improving the RSI(2) signals.

If we only trade the RSI(2) oversold daily signals when the Weekly RSI(2) is also oversold, the average % profit per trade is roughly doubled regardless of which RSI(2) cross-under threshold that you use.

The Weekly RSI(2) indicator is calculated using the closing value of the previous weekly RSI(2).

For example, the following chart plots the daily RSI(2) level (the black line) and the Weekly RSI(2) level (the blue line) beneath the price series.



Note that the value of the weekly RSI(2) indicator will change between the last trading day of the previous week and the first trading day of the current week. It then remains constant until the first trading day of the following week, and so on.

RSI(2) Cross-under with weekly RSI(2) Over-Sold. Average Results

The following table presents the average performance metrics if all signals were traded during the sample period.

The strategy is to buy the next day open if RSI(2) crosses below *X* AND the weekly RSI(2) indicator value is below *Y*.

Exit open positions if the close is above the previous day's high.

Here are the results if *Y* = 2.5

(i.e. the weekly RSI(2) Indicator is below 2.5 on the day of the daily RSI(2) cross-under):

RSI(2) Crosses Below X	# of Trades	Avg % P/L Per Trade	Avg Bars Held	% of Winners	Profit Factor
X = 25	2317	0.92	4.81	68.58	1.49
X = 22.5	2239	0.96	4.78	68.65	1.53
X = 20	2155	0.98	4.81	68.49	1.55
X = 17.5	2051	0.92	4.78	68.75	1.51
X = 15	1968	1.11	4.78	69.16	1.62
X = 12.5	1832	1.14	4.77	68.40	1.61
X = 10	1714	1.13	4.76	68.20	1.59
X = 7.5	1543	1.17	4.74	68.05	1.59
X = 5	1263	1.59	4.64	69.99	1.83
X = 2.5	842	1.91	4.9	69.12	1.93

The above table illustrates that you can significantly improve the average % return per trade of a daily RSI(2) oversold system if you include a weekly RSI(2) oversold filter.

The problem with only permitting a trade if the weekly RSI(2) is below 2.5, is that you reduce the number of tradable daily RSI(2) opportunities.

For the next test I relaxed the weekly RSI(2) threshold to 15. That is to say, daily RSI(2) cross-under signals are only allowed if the weekly RSI(2) value is below 15.

The results are as follows:

RSI(2) Crosses Below X	# of Trades	Avg % P/L Per Trade	Avg Bars Held	% of Winners	Profit Factor
X = 25	13581	0.45	4.92	66.52	1.27
X = 22.5	13191	0.42	4.92	66.17	1.25
X = 20	12722	0.44	4.92	66.32	1.26
X = 17.5	12266	0.43	4.9	66.44	1.26
X = 15	11709	0.47	4.88	66.73	1.28
X = 12.5	10909	0.51	4.89	66.86	1.3
X = 10	9994	0.56	4.89	66.66	1.33
X = 7.5	8835	0.66	4.9	67.55	1.38
X = 5	7313	0.76	4.88	67.63	1.43
X = 2.5	4852	0.82	4.94	66.88	1.43

The above table illustrates that relaxing the weekly RSI threshold does reduce the average per trade performance of the strategy, although on the positive side far more opportunities are produced.

The following chart provides two examples if our strategy was a daily RSI(2) crossing below 5 and a weekly RSI(2) value below 15:

Daily RSI(2) and Weekly RSI(2) Oversold Strategy Portfolio Results

For the next test I applied the portfolio management rules. Only 5 open positions were allowed at a time and 20% of available equity was allocated to each new position.

Note that the following results were produced if the signal is a daily RSI(2) value crossing below 5 while the weekly RSI(2) value is below 15.

Whenever there are multiple signals, market on open orders are placed for the stocks with the highest 100 day ROC% first.

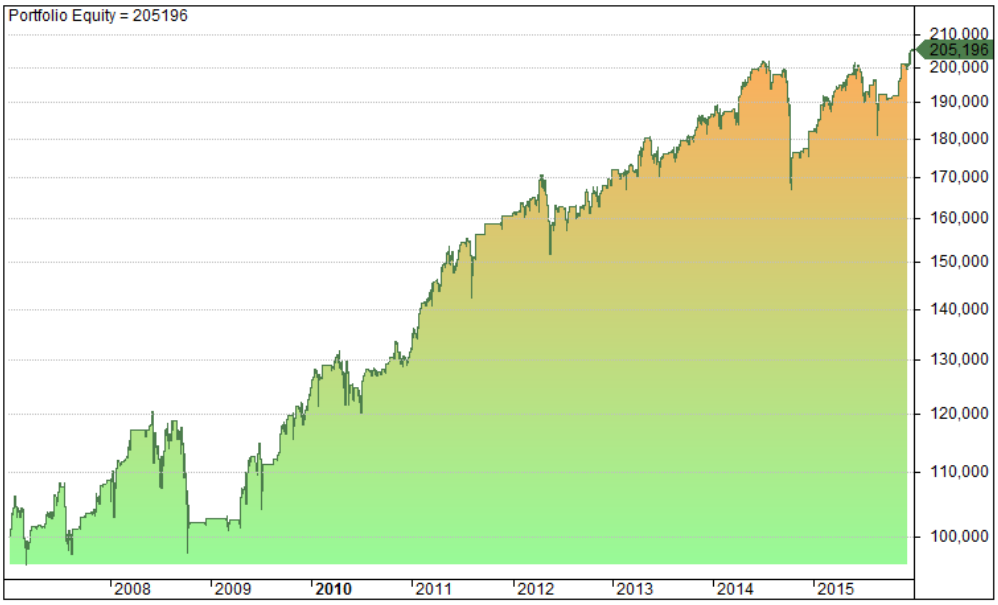
As with the previous strategies, I have also applied a filter which only permits us to trade a stock if the 100 day ROC% is positive on the day of the signal.

Exit positions if the close is above the value of the previous day's high OR you've held the position for 10 days.

The test results during the sample period were as follows:

- Trades = **849**
- Average P/L % per trade = **0.45%**
- Average Win-Rate % = **67.84%**
- Average Bars Held = **4**
- Average Exposure = **28.28%**
- Average CAR = **8.32%**
- Average MDD = **(-18.93%)**

Beneath you will find the equity curve that was produced during the sample period, as well as a monthly breakdown of returns…



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr%	MDD%
2007	3.0%	-3.1%	1.5%	-0.1%	2.5%	2.8%	-7.2%	2.1%	1.8%	0.6%	4.1%	0.8%	**8.5%**	**-10.0%**
2008	2.4%	0.6%	4.5%	0.0%	0.9%	-5.0%	5.1%	0.8%	-4.7%	-9.6%	0.0%	0.4%	**-5.6%**	**-18.9%**
2009	0.0%	0.0%	-0.1%	4.0%	5.5%	2.1%	-3.1%	0.8%	4.2%	0.8%	1.3%	3.2%	**20.0%**	**-9.4%**
2010	-1.5%	6.1%	0.5%	-1.7%	-1.6%	-3.3%	5.8%	-0.8%	0.3%	3.0%	-2.0%	2.2%	**6.6%**	**-8.7%**
2011	5.9%	2.2%	2.8%	2.4%	1.8%	1.4%	0.2%	1.0%	1.5%	0.0%	1.4%	0.0%	**22.3%**	**-8.4%**
2012	0.6%	1.0%	-0.0%	3.0%	-5.7%	2.7%	0.2%	-1.5%	3.7%	-0.1%	0.9%	1.6%	**6.1%**	**-11.0%**
2013	-0.6%	1.0%	0.1%	4.5%	-2.5%	0.0%	0.9%	0.3%	1.5%	1.6%	1.4%	0.8%	**9.3%**	**-5.6%**
2014	0.5%	-0.0%	-1.5%	6.3%	1.6%	0.5%	-3.3%	2.2%	-2.9%	-8.2%	0.4%	2.6%	**-2.4%**	**-17.2%**
2015	1.7%	2.9%	1.9%	-0.3%	2.3%	-1.0%	-0.6%	-1.4%	-0.6%	0.4%	4.8%	2.0%	**12.7%**	**-10.2%**
Avg	**1.3%**	**1.2%**	**1.1%**	**2.0%**	**0.5%**	**0.0%**	**-0.2%**	**0.4%**	**0.5%**	**-1.3%**	**1.4%**	**1.5%**		

Final RSI(2) Strategy Rules

1. Daily RSI(2) crosses below 5.
2. Weekly RSI(2) is below 15.
3. 100 Day ROC % > 0.
4. When the above rules are met, place a limit order that is *X* * ATR(5) below the low of the signal bar OR an order to buy at the next open.
5. Exit open positions if the closing price is greater than the previous day's high OR you've held the position for 10 days.

Other Filters

In this section of the guide we'll apply some other filters which take into account either the current market environment or the historical price action of the stock. This is important because you will often find that mean-reversion strategies tend to either work better during certain market conditions, or for certain types of stocks more so than others.

MMRC Indicator

For the first filter we will consider the historical price action of the stocks which we trade. Simply put, we want to trade stocks that tend to exhibit mean reversion more so than momentum. This is because we are buying oversold stocks.

If the stocks which we trade exhibit momentum then a down day is more likely to be followed by another down day…This is obviously *bad* for us because we are buying stocks after a down day.

If on the other hand the stocks which we trade exhibit mean reversion, a down day is more likely to be followed by an up day. This is obviously *good* for us because we are buying stocks after a down day.

There are a number of methods for quantifying mean reversion but for this example we'll use the MMRC (momentum mean reversion count) indicator.

To calculate the indicator we first assign a value of 1 to the momentum count if the sign of the daily returns yesterday and today are equal to each other.

We then assign a value of 1 to the mean reversion count if the sign of the daily returns yesterday and today are not equal to each other.

We then add the total count of both momentum and mean reversion during the past *X* periods before finally calculating as a percentage the total number of periods during the past *X* periods where momentum count was equal to 1.

In Pseudo code the MMRC can be written as follows:

Return = ((C – Ref(C,-1)) / Ref(C,-1)) * 100

If Return * Ref(Return,-1) > 0

then Momentum = 1

else Momentum = 0

If Return * Ref(Return,-1) < 0

then MeanReversion = 1

else MeanReversion = 0

***X* = Periods**

MomentumCount = Sum(Momentum,*X*)

MeanReversionCount = Sum(MeanReversion,*X*)

MMRC(*X*) = 100 * MomentumCount / (MomentumCount + MeanReversionCount)

Note that if MMRC(*X*) is less than 50 then the price series has been predominantly mean reverting during the past *X* periods. These are the stocks which we want to target because we are placing bets on a reversion to the mean.

For example, note from the following $MYL chart that when the MMRC (shown in the bottom pane) is above 50 then the downward momentum is persistent. This means that we should avoid buying into the weakness.

To illustrate the benefit of filtering our universe of stocks according to the value of the MMRC indicator we can analyse the following two strategies.

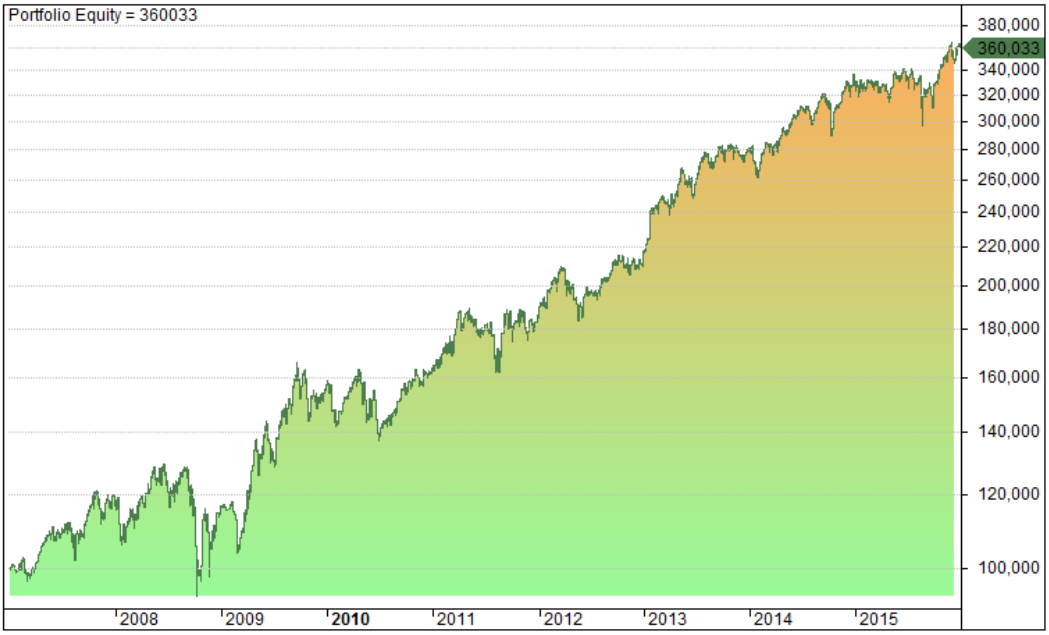
The first strategy is as follows:

- Identify any of the 5 signals from part 3 of this book.
- Rank the signals according to the 100 day ROC%.
- Place MOO orders for the top ranked stocks. Good for one day only.
- The maximum number of open positions allowed is 10.
- Each position is allocated 10% of portfolio equity.

- Exit open positions if the close is greater than the previous 5 day high OR the position has been held for 10 days.

The results of the strategy can be seen below:

- Trades = **2424**
- Average P/L % per trade = **0.59%**
- Win-Rate % = **61.34%**
- Profit Factor = **1.32**
- Average Bars Held = **8**
- Exposure = **88.30%**
- CAR = **15.30%**
- MDD = **(-27.78%)**



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr%	MDD%
2007	-0.3%	-0.0%	0.6%	6.5%	4.3%	-1.7%	1.0%	-1.3%	4.8%	5.8%	-1.9%	0.1%	**18.7%**	**-9.1%**
2008	-7.7%	3.9%	2.7%	4.0%	2.9%	-0.8%	-0.1%	3.5%	-7.2%	-5.0%	-6.0%	9.4%	**-1.9%**	**-27.8%**
2009	-0.2%	-6.4%	5.2%	18.7%	0.2%	-1.8%	8.4%	3.5%	5.6%	-8.9%	2.8%	4.6%	**33.4%**	**-13.2%**
2010	-7.5%	3.2%	5.2%	2.4%	-5.5%	-8.1%	3.2%	2.8%	5.7%	2.4%	-1.5%	3.1%	**4.2%**	**-16.0%**
2011	2.5%	4.7%	6.4%	1.6%	-1.3%	-2.0%	-1.8%	0.2%	1.5%	3.1%	-2.0%	1.4%	**14.8%**	**-14.6%**
2012	2.3%	8.0%	1.5%	-4.2%	-5.2%	4.8%	-0.4%	3.7%	3.6%	-1.0%	2.1%	0.3%	**15.9%**	**-12.4%**
2013	11.5%	3.2%	0.3%	1.1%	3.4%	-1.2%	7.6%	-2.0%	3.4%	0.5%	-1.4%	1.7%	**30.9%**	**-7.1%**
2014	-4.9%	5.8%	-1.2%	5.7%	2.0%	3.1%	-2.4%	3.8%	-0.5%	-0.0%	4.6%	1.5%	**18.2%**	**-10.1%**
2015	-2.5%	2.1%	-1.8%	-3.1%	6.1%	0.2%	-1.6%	-1.2%	-1.8%	8.0%	4.7%	-0.1%	**8.5%**	**-13.2%**
Avg	**-0.8%**	**2.7%**	**2.1%**	**3.6%**	**0.8%**	**-0.8%**	**1.5%**	**1.5%**	**1.7%**	**0.5%**	**0.2%**	**2.4%**		

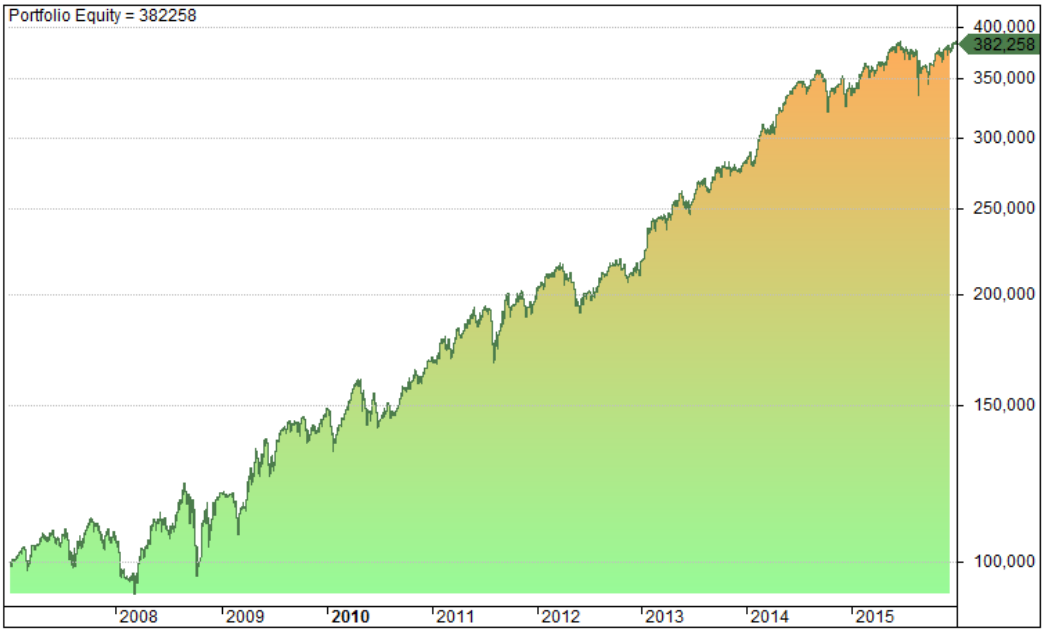
For the next test we will use the same rules as above except that instead of ranking the signals by order of 100 day ROC%, we'll rank them by the value of the MMRC. The lower the MMRC is, the higher the stock is ranked.

This means that we favour stocks which tend to exhibit mean-reversion as opposed to momentum.

Further, we will only place orders to buy a stock if on the day of the signal the MMRC for past 50 days is less than 50.

Here are the results:

- Trades = **2312**
- Average P/L % per trade = **0.63%**
- Win-Rate % = **63.19%**
- Profit Factor = **1.41**
- Average Bars Held = **7**
- Exposure = **81.55%**
- CAR = **16.06%**
- MDD = **(-21.23%)**



Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr%	MDD%
2007	2.0%	-1.0%	3.0%	2.5%	1.9%	-2.8%	-3.7%	4.1%	3.4%	1.2%	-2.3%	-0.6%	7.6%	-9.4%
2008	-9.1%	-2.2%	5.4%	4.1%	6.8%	-2.2%	3.1%	7.1%	-6.7%	-1.4%	-0.0%	7.5%	11.3%	-21.2%
2009	-0.7%	-5.7%	2.9%	12.0%	1.5%	0.2%	7.1%	1.1%	0.8%	-4.9%	3.0%	3.6%	21.7%	-10.4%
2010	-8.6%	7.0%	7.5%	3.3%	-6.7%	-3.9%	4.4%	-1.1%	6.9%	2.8%	-1.4%	5.9%	15.4%	-11.6%
2011	2.2%	2.3%	3.8%	1.5%	4.6%	-0.7%	-2.8%	-1.0%	4.6%	2.7%	-2.5%	2.1%	17.7%	-13.7%
2012	3.1%	2.8%	2.2%	-2.0%	-7.7%	3.8%	0.8%	4.1%	2.1%	-0.7%	-1.1%	1.3%	8.4%	-12.1%
2013	9.4%	3.0%	1.5%	3.0%	-0.3%	0.1%	5.5%	-1.5%	4.9%	1.1%	-0.8%	2.4%	31.8%	-5.7%
2014	0.1%	8.7%	-0.6%	6.1%	3.2%	3.1%	-2.6%	4.5%	-0.0%	-3.1%	2.4%	-2.2%	20.5%	-10.2%
2015	0.3%	6.0%	-2.0%	0.8%	5.7%	0.5%	-1.2%	-3.1%	-2.7%	5.7%	1.0%	1.2%	12.2%	-12.8%
Avg	-0.2%	2.3%	2.6%	3.5%	1.0%	-0.2%	1.2%	1.6%	1.5%	0.4%	-0.2%	2.4%		

Note from the above results that only trading stocks with a lower MMRC improves win-rate, profit factor, absolute return and risk adjusted return of the strategy.

Adding the MMRC filter to the strategy also helped it to produce no losing years during the sample period.

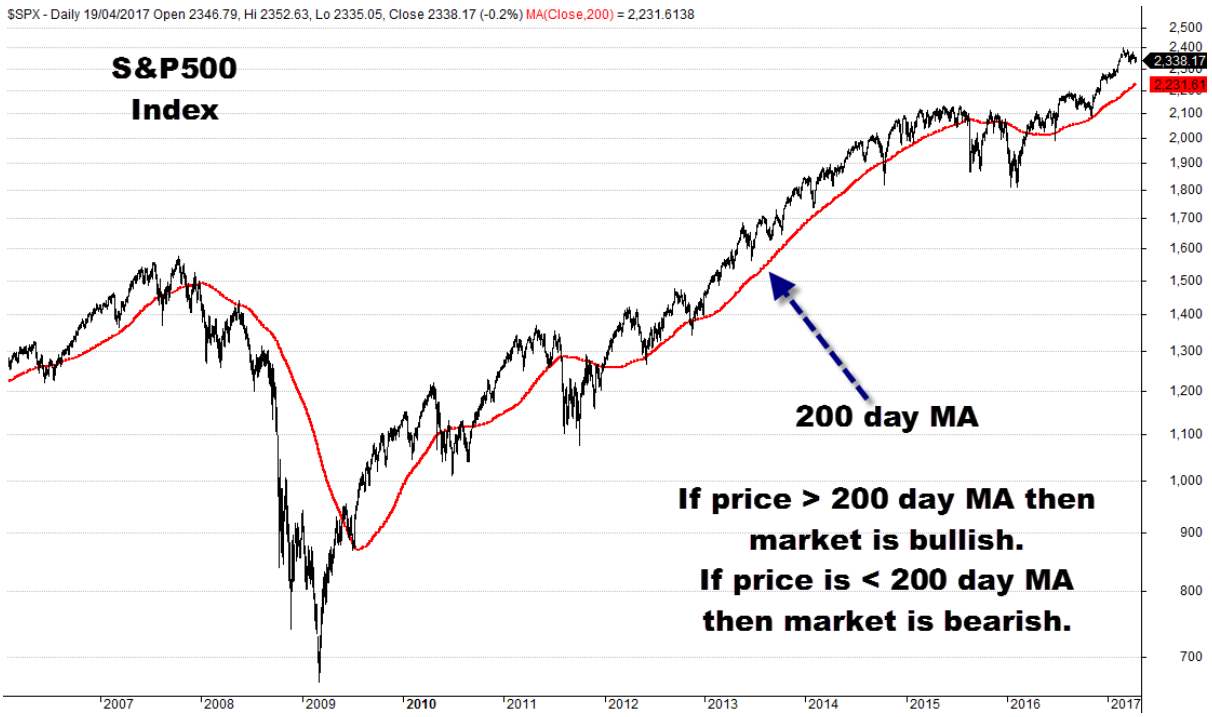
Unemployment Rate Filter

The next filter which we'll apply is one which states that we can only trade a signal if the overall market environment is bullish.

One method for identifying a bullish market is mentioned earlier and simply measures the 100 day ROC% of a major equity market index such as the S&P500 or Russell3000.

If the 100 day ROC% is positive, then the market is bullish and we want to be long. If the 100 day ROC% is negative, then the market is bearish and we want to be flat or short.

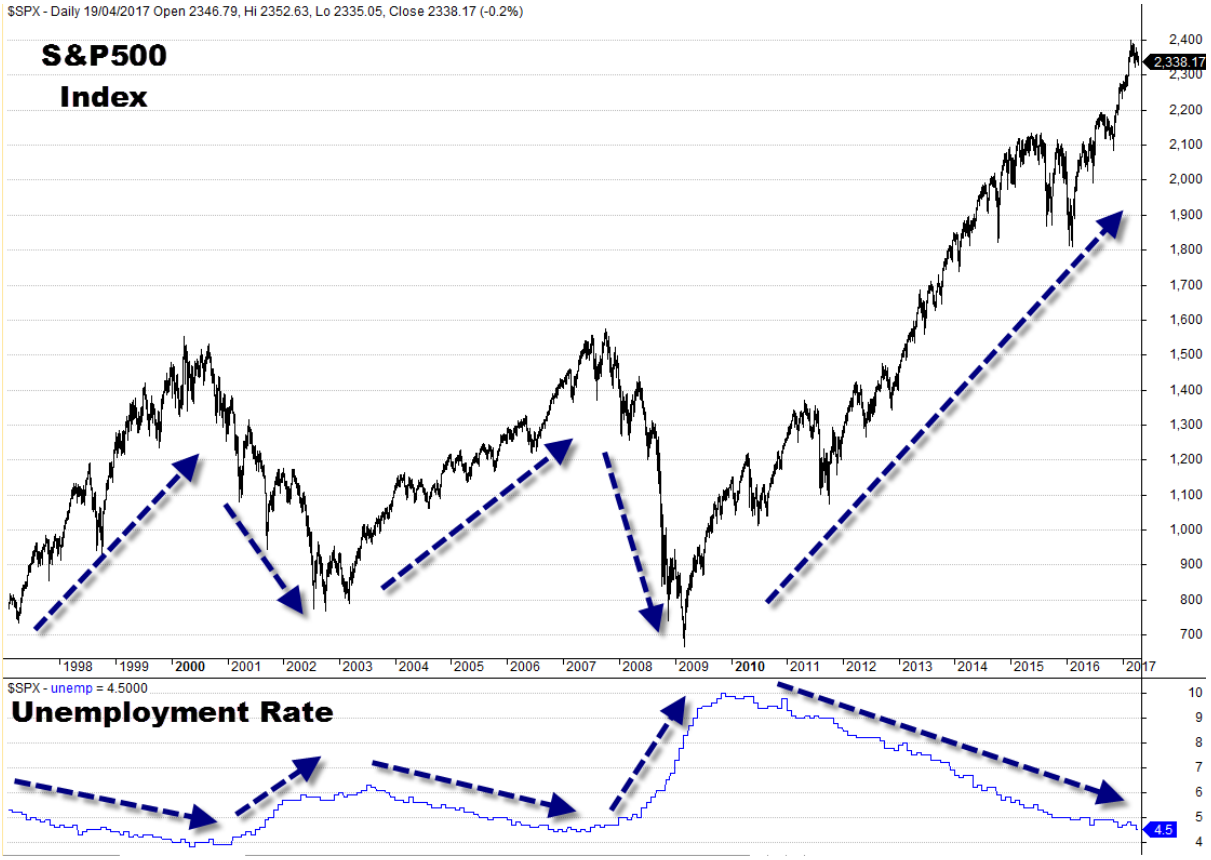
Another more commonly used approach is to define a bullish market as one where the price of the S&P500 is greater than the 200 day MA. For example:



However, I explained a similar approach in my last two books and seeing that you'd probably like to learn something new then I'll explain a different type of market environment filter which considers the state of the economy.

Specifically, we will use the official unemployment rate. As the following chart shows, there is a relatively strong and inverse correlation between the unemployment rate and the price of the S&P500.

Note that when the S&P500 is heading up, the unemployment rate tends to be heading down. And vice versa, when the S&P500 is heading down, the unemployment rate tends to be heading up.



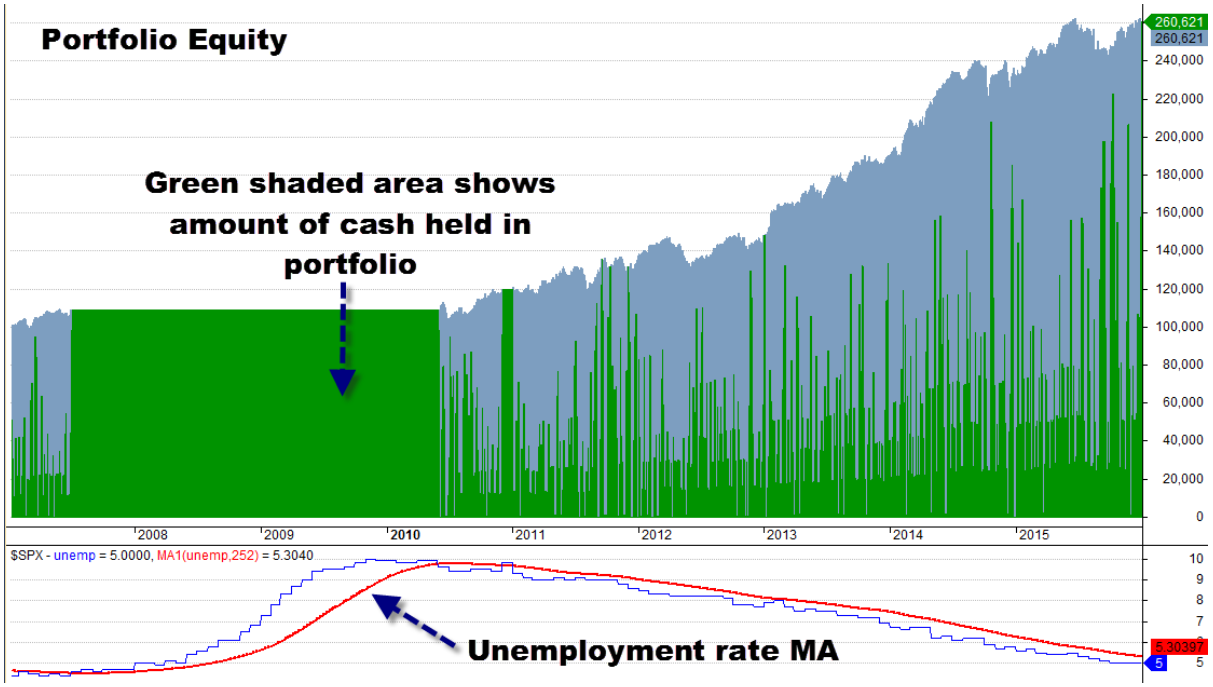
A useful method for determining the direction of the overall market is therefore to analyse the trend of the unemployment rate. When the unemployment rate rises, we might help ourselves by not buying equities.

As one example, we can test our most recent strategy with a new filter which says that we are only allowed to place buy orders if the unemployment rate is less than the one year average unemployment rate.

Below are the results when including the unemployment rate filter:

- Trades = **1591**
- Average P/L % per trade = **0.63%**
- Win-Rate % = **64.17%**
- Profit Factor = **1.48**
- Average Bars Held = **8**
- Exposure = **55.64%**
- CAR = **11.23%**
- MDD = **(-13.71%)**

The next chart shows the equity curve of the portfolio in the top pane and the unemployment rate and one year average in the bottom pane. Note that when the unemployment rises above the moving average we scale out of equities and into cash:



And below you can see the monthly breakdown of returns. It's important to recognise that although the drawdowns of the strategy are greatly reduced, the net profitability of the strategy is too. This should be expected because the unemployment filter did not permit us to trade during 2009 (which was a great year for the market).

As with most market environment filters, there is a constant trade-off between the absolute profitability of a system and the amount of volatility that is endured to achieve it.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr%	MDD%
2007	2.0%	-1.0%	3.5%	2.5%	1.9%	-2.6%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%	**8.8%**	**-5.9%**
2008	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	**0.0%**
2009	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	**0.0%**
2010	0.0%	0.0%	0.0%	0.0%	0.0%	-4.9%	4.4%	-1.1%	6.9%	2.8%	-1.4%	3.4%	**9.9%**	**-8.6%**
2011	-2.8%	2.2%	4.3%	1.5%	4.6%	-0.7%	-2.8%	-1.0%	4.6%	2.7%	-2.5%	2.1%	**12.4%**	**-13.7%**
2012	3.1%	2.8%	2.2%	-2.0%	-7.7%	3.8%	0.8%	4.1%	2.1%	-0.7%	-1.1%	1.3%	**8.3%**	**-12.1%**
2013	9.3%	2.8%	1.1%	2.6%	0.0%	-0.3%	5.5%	-1.5%	5.1%	1.4%	-0.8%	2.4%	**30.8%**	**-5.8%**
2014	0.1%	8.7%	-0.6%	6.1%	3.2%	3.1%	-2.6%	4.7%	-0.2%	-1.9%	2.4%	-2.2%	**22.2%**	**-8.8%**
2015	0.5%	5.4%	-1.8%	0.8%	5.7%	0.5%	-1.2%	-3.1%	-2.7%	5.7%	1.0%	1.2%	**12.0%**	**-12.8%**
Avg	**1.4%**	**2.3%**	**1.0%**	**1.3%**	**0.9%**	**-0.1%**	**0.7%**	**0.2%**	**1.7%**	**1.1%**	**-0.3%**	**0.9%**		

What about stop-losses?

You'll have noticed that with the exception of a 10 day timed stop-loss, the 5 strategies that we've already discussed employ no other stop-loss methods.

The fact is that stop-losses tend to degrade the performance of mean-reversion systems rather than improve them.

However, stop-losses can be useful because they go some way towards limiting the size of potential losses and they also allow you to size your positions so that each new trade is targeting the same amount of potential dollar sized loss.

To illustrate this point we will test the strategy below with the inclusion of a fixed % maximum loss stop which is executed on the close. That is to say, we only stop ourselves out of a trade if the closing price is below the stop-loss price.

The exact strategy is as follows:

- Identify any of the 5 signals from part 3 of this book.
- The MMRC must also be below 50.
- Rank the signals according to the value of MMRC. Lower MMRC values rank higher.
- Place MOO orders for the top ranked stocks. Good for one day only.
- The maximum number of open positions allowed is 10.
- Each position is allocated 10% of portfolio equity.
- Exit open positions if the close is greater than the previous 5 day high OR the position has been held for 10 days OR the price closes below the percentage based stop-loss.

For the percentage based stop-loss tests, the stop-loss will be a closing price that is more than 2.5%, 5%, 10%,….and 20% below our entry price.

Percentage Based Stop-Loss Test Results

Stop-loss %	Net % Profit	CAR	Max. Trade % Drawdown	Max. Sys % Drawdown	CAR/MDD	Profit Factor	# Trades	Avg % Profit/Loss	% of Winners
NO Stop	282.26	16.06	-36.74	-21.23	0.76	1.41	2312	0.63	63.19
2.50%	183.02	12.26	-24.06	-28.13	0.44	1.24	3047	0.38	53.23
5%	157.85	11.1	-30.69	-27.03	0.41	1.24	2582	0.41	60.11
7.50%	215.08	13.6	-30.69	-26.69	0.51	1.32	2423	0.52	62.11
10%	212.21	13.49	-23.14	-28.36	0.48	1.32	2358	0.53	63.06
12.50%	239.71	14.56	-23.17	-26.94	0.54	1.35	2332	0.57	62.86
15%	243.83	14.71	-26.49	-24.55	0.6	1.36	2328	0.58	63.1
17.50%	270.56	15.67	-26.33	-24.99	0.63	1.4	2320	0.61	63.06
20%	271.44	15.7	-27.81	-22.91	0.69	1.4	2316	0.61	63.04

The above table illustrates that with the exception of the maximum single trade drawdown, all of the performance metrics shown above are better when using no percentage based stop-loss.

In short, stop-losses do not improve the absolute or risk adjusted returns of this particular strategy.

Part 4 – Swing Trading

Now that you are familiar with a variety of short-term patterns that tend to precede short-term reversals, we can now move onto the next part of the book and look at some swing-trading strategies.

What is Swing-Trading?

Swing trading is a method used by traders to profit from price movements that last from anywhere between a few days to about a month.

The goal is to selectively trade in and out of stocks or ETFs which have been recently trending higher but have currently pulled back.

The basic idea behind swing trading is that a stock which is trending higher tends to continue trending higher. A pullback then allows a trader the chance to enter an established trend at a price that is cheaper than the recent highs.

Further, pullbacks offer the swing trader a well-defined stop-loss and potential profit target.

So perhaps one of the biggest advantages of swing-trading is that if done correctly, you are able to reduce the amount of equity drawdown that you might otherwise suffer if holding a position for a prolonged period of time.

In contrast to the previous short-term trading strategies that I outlined in part 3, another advantage of swing trading is that because buy-stop entry orders are typically used instead of market on open or limit entry orders, positions are only initiated if the price is moving in the direction of the longer-term trend.

The following chart provides an example of a classic swing-trading setup. Note that we first identify a stock that is in an uptrend. We then wait patiently for a pullback. And then we enter our position when the trend continues.

The eagle-eyed amongst you will notice that during the pullback there were 2 CNLDD signals. However, instead of placing market on open orders or limit orders below the low of the CDLDD signal bars, a swing trader first waits for confirmation that the pullback might have ended.

The following chart shows another similar setup. We can see that the stock is in a prior uptrend (the green shaded area) and then it begins to pullback (the yellow shaded area).

Note that if applying one of the short-term strategies from part 3, we would have placed a market on open order or a limit entry order beneath the low of one of the signal bars (labelled 1, 2, 3 and 4).

Those orders would then have gotten filled during bar 1 or bar 2 and we would have had to hold a losing position for a couple of days before the price resumed its uptrend.

Furthermore, the price might have kept falling further than the low of bar 4. The reality is that when trading the right edge of the chart we cannot be certain of what is going to happen next.

But as a swing trader, instead of placing market on open orders or limit orders *below* the price you place buy-stop orders *above* the price. This way, you only enter a position if the price begins to rally.

In the previous example, we can see buy-stop orders (the blue dashed lines) would have been placed above bars 1, 2, and 3. But because the price kept falling, none of the buy-stop orders were filled.

It is only following bar 4 that the price begins to rally above the previous bar's high and so the buy stop order would have been executed and we would have bought the stock.

We can therefore define the 3 components of a swing trading entry as follows:

- A stock has been in prior up-trend.
- Then the stock pulls back or consolidates.
- Then the price continues to rally in the direction of the prior trend.

So our first task is to identify stocks that have been in a prior uptrend.

Identifying a Trend

The short-term pattern strategies in this book have each included a ROC%(C,100) > 0 filter to indicate that a stock is in an uptrend. I've also explained how the relationship between the price and a moving average can also be used to define whether a market is trending up or down.

However, these are pretty simple and reasonably well known methods for identifying a trend so for our swing trading strategy ideas I'll explain a few of the more advanced methods.

Return / MaxDD

The first method requires us to calculate the return during the past *X* periods and then divide the return by the maximum drawdown of the past *X* periods. This trend filter therefore rewards stocks which have made positive returns but at the same time penalises stocks which have had significantly large drawdown periods.

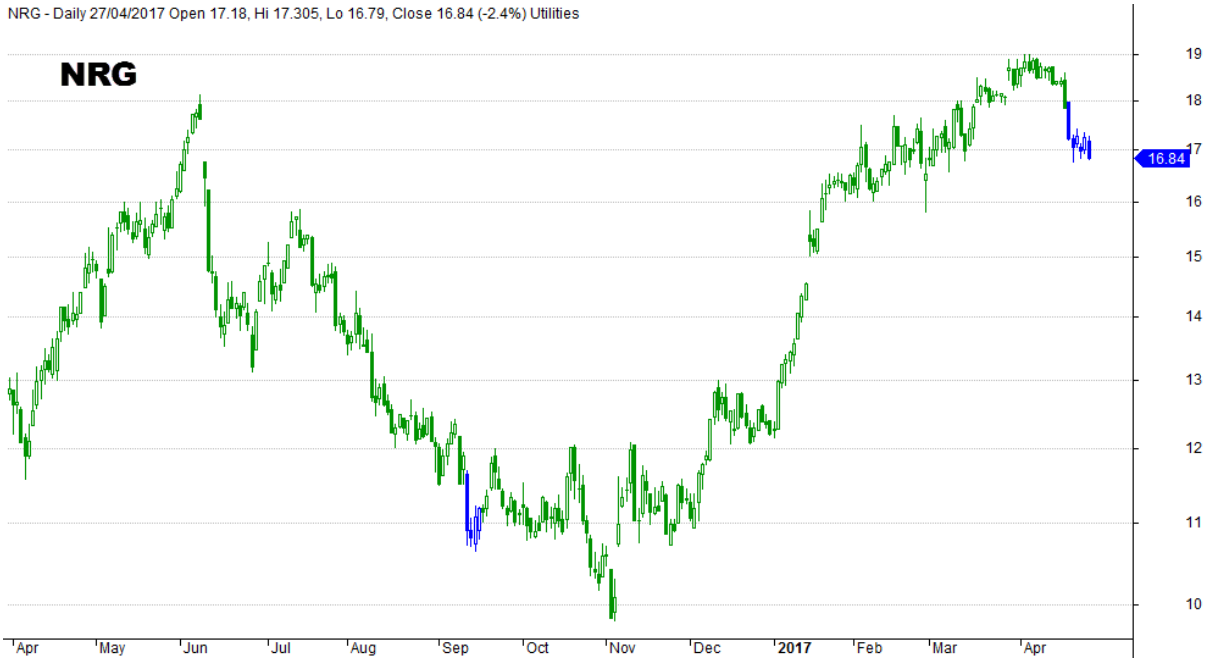
For example, the following scan results were found if searching the S&P500 on 26/04/17.

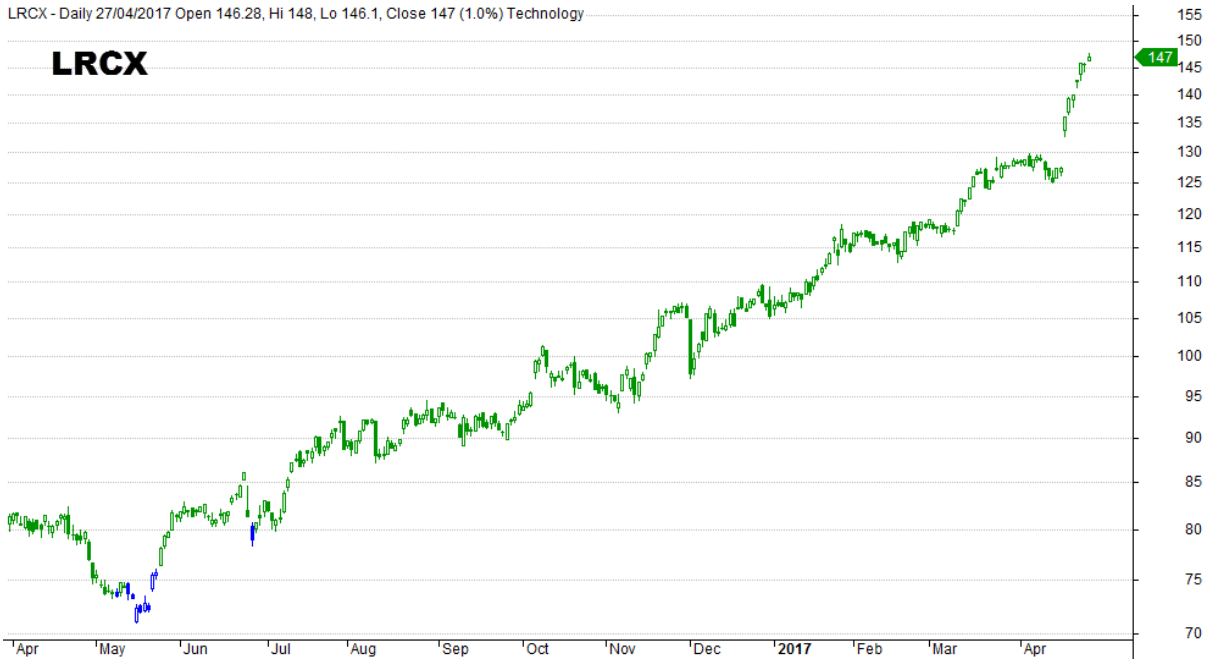
Note that the results are sorted by the 100 day ROC%. However, if you look at the right hand side column you will notice that stocks with a lower 100 day ROC% can be ranked higher if the 100 day maximum drawdown is lower.

Ticker	Date/Time	100DayROC%	100DayMaxDD	100DayReturn/100DayMaxDD	rank
AMD	27/04/2017	62.34	24.15	2.58	46.00
BCO	27/04/2017	59.18	14.68	4.03	10.00
TER	27/04/2017	55.51	6.89	8.06	1.00
NRG	27/04/2017	52.12	46.02	1.13	167.00
VRTX	27/04/2017	50.89	31.11	1.64	93.00
LRCX	27/04/2017	50.34	9.62	5.23	2.00
MU	27/04/2017	49.51	11.75	4.21	6.00
BCR	27/04/2017	48.01	14.76	3.25	28.00
ATVI	27/04/2017	46.79	22.90	2.04	62.00
SWKS	27/04/2017	45.60	12.58	3.62	16.00
ILMN	27/04/2017	43.86	36.12	1.21	149.00
JBL	27/04/2017	43.14	14.55	2.97	33.00
IDXX	27/04/2017	42.56	10.64	4.00	11.00
QRVO	27/04/2017	42.15	25.49	1.65	91.00
WDC	27/04/2017	40.99	12.60	3.25	29.00
CSX	27/04/2017	40.48	9.74	4.16	9.00

Take the following 2 charts as an example. NRG has a 100 day ROC% of 52% but during the past 100 day the greatest drawdown was 46.02%.

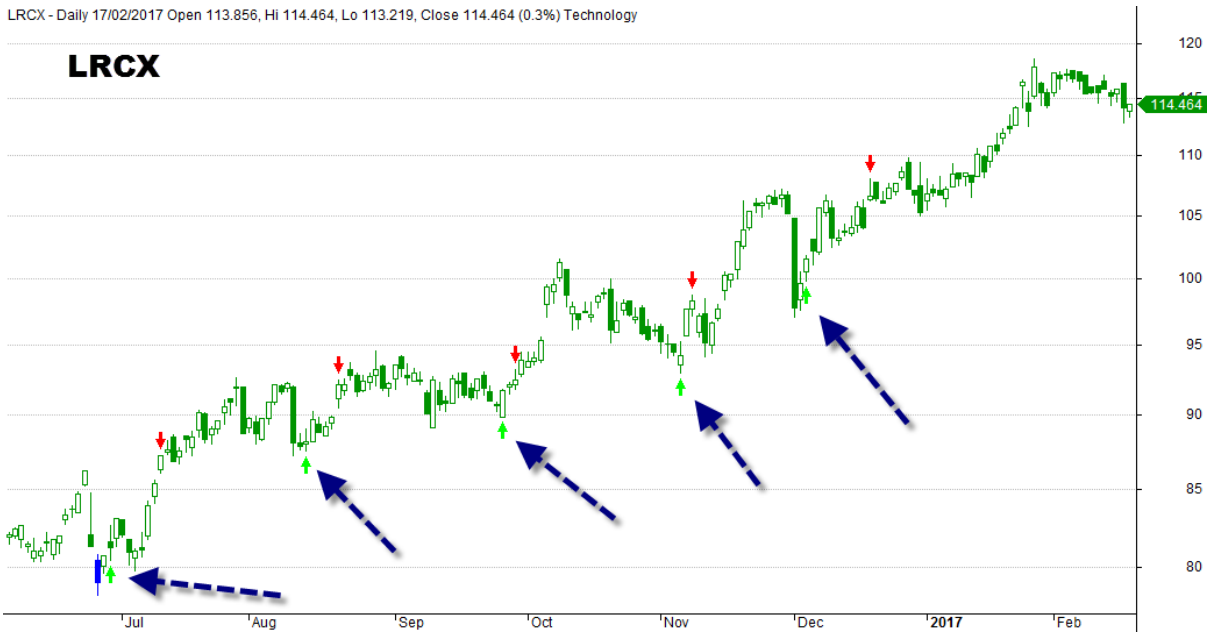
LRCX has a lower 100 day ROC% of 50%, but because the greatest drawdown during the past 100 days was only 9.62% it is the second highest ranked stock belonging to the S&P500 when ranking by the Return/MaxDD metric.





It should be clear from the above two charts that LRCX has produced a far smoother trend than NRG and would make a great candidate for identifying swing trading setups.

For example, the following swing trades in LRCX were all produced using the setup criteria that you'll learn in the next section of the book:



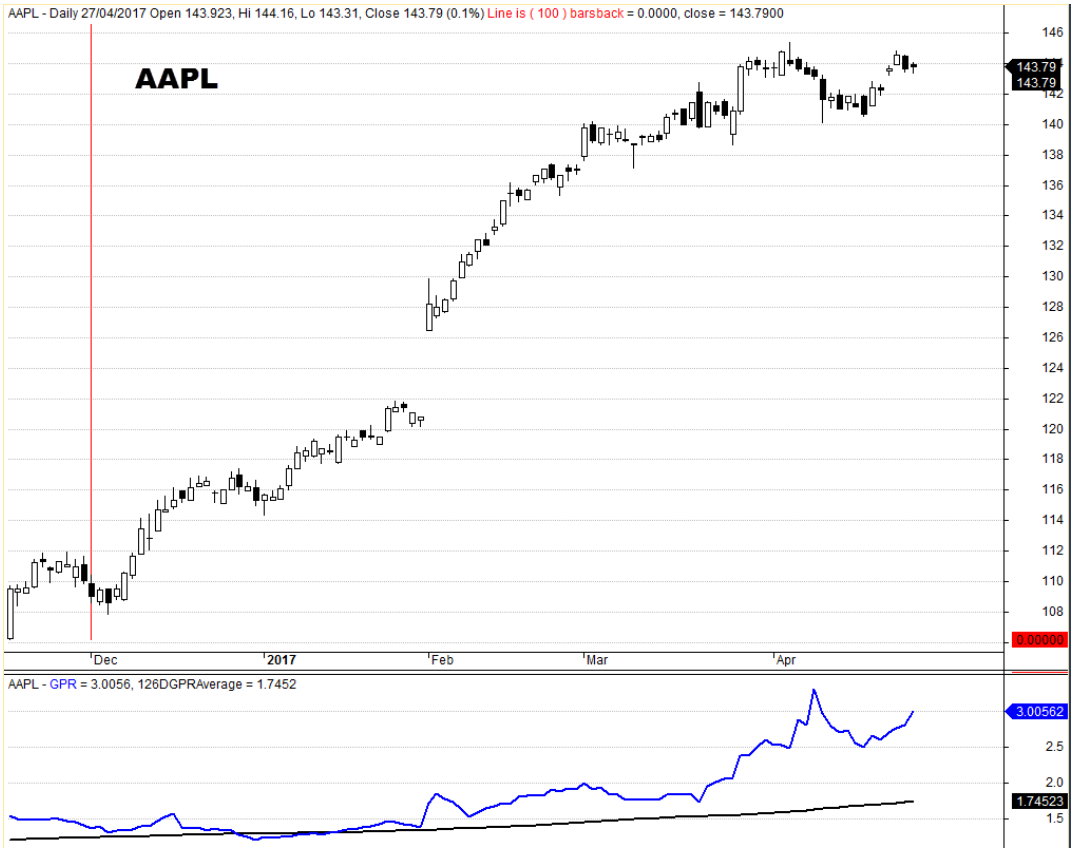
Gain to Pain Ratio

The gain to pain ratio is another useful tool for analysing the trend of a market. To calculate the GPR you simply take the sum of all positive periods and then divide by the absolute value of the sum of all negative periods.

For example, if we scan the S&P500 and sort the stocks in order of their 100 day GPR we find that the top ten list looks like this:

Ticker	Date/Time	GPR	rank
BCR	27/04/2017	3.57	1.00
AAPL	27/04/2017	3.01	2.00
ADBE	27/04/2017	2.86	3.00
RAI	27/04/2017	2.75	4.00
MCD	27/04/2017	2.51	5.00
BAX	27/04/2017	2.47	6.00
LRCX	27/04/2017	2.39	7.00
ATVI	27/04/2017	2.36	8.00
KLAC	27/04/2017	2.31	9.00
FB	27/04/2017	2.30	10.00

The top 3 ranked stocks BCR, AAPL and ADBE can be seen below. Note that the GPR and 6 month moving average of GPR values are also plotted beneath each price chart.

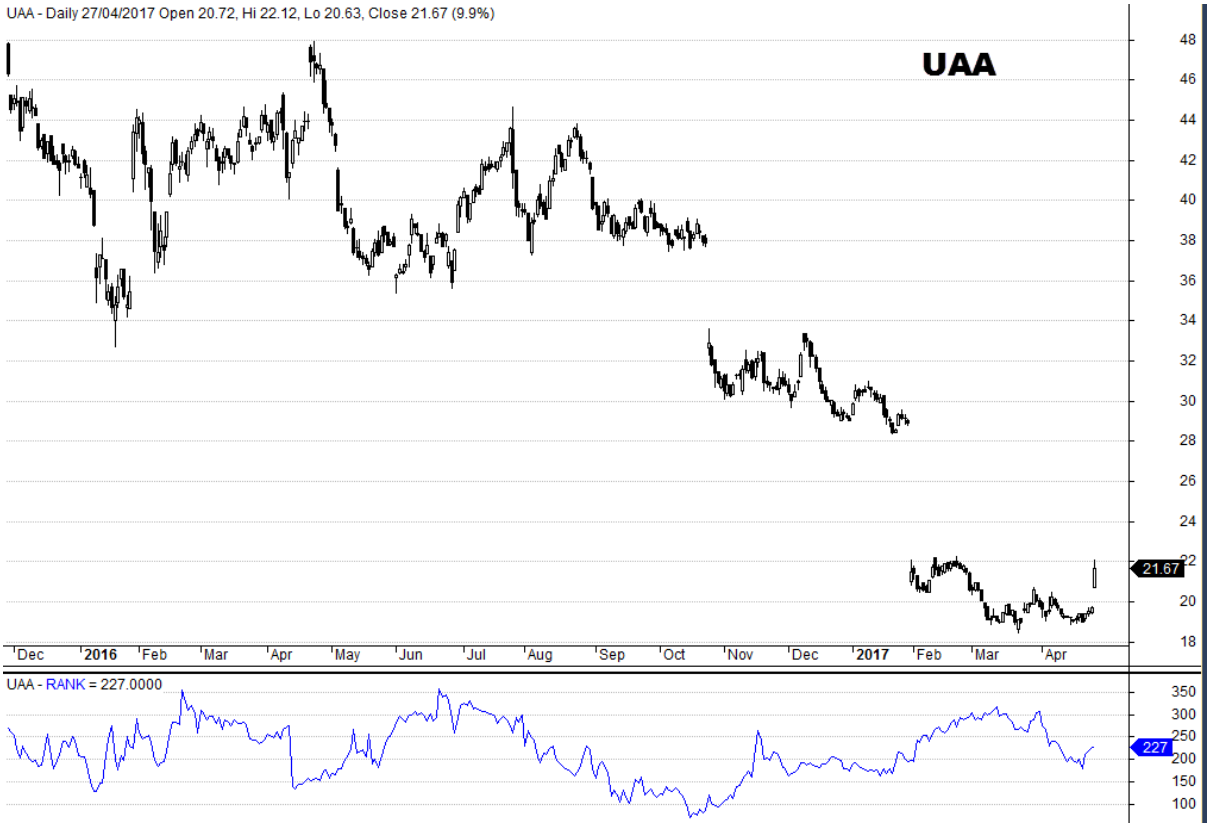

AAPL - Daily 27/04/2017 Open 143.923, Hi 144.16, Lo 143.31, Close 143.79 (0.1%) Line is (100) barsback = 0.0000, close = 143.7900
AAPL
146
143.79
143.79
140
138
136
134
132
130
128
126
124
122
120
118
116
114
112
110
108
0.00000
Dec
2017
Feb
Mar
Apr
AAPL - GPR = 3.0056, 126DGPRAverage = 1.7452
3.00562
2.5
2.0
1.74523
1.5

ADBE - Daily 27/04/2017 Open 133.13, Hi 134.25, Lo 132.76, Close 133.38 (0.4%) Line is (100) barsback = 0.0000, close = 133.3800
ADBE
136
133.38
133.38
130
128
126
124
122
120
118
116
114
112
110
108
106
104
102
100
0.00000
Dec
2017
Feb
Mar
Apr
ADBE - GPR = 2.8646, 126DGPRAverage = 1.4090
2.8646
2.5
2.0
1.409

The above 3 charts clearly illustrate that high GPR values indicate very strong and smooth uptrends. Being able to identify and then enter these stocks on a pullback would be a good swing trading strategy.

Conversely, if we look at an example of a bottom ranked stock we can see why it might be prudent to avoid them. For example, the following UAA chart has its rank plotted beneath the price series.

Note that the stock has not been ranked better than 90 during the past 1 year and in that time has lost more than 50% of its value.



Kaufmann Efficiency Ratio

The efficiency ratio was popularized by Perry Kaufman in his book "Trading Systems and Methods" and is another tool that can be used to measure the strength of a trend while adjusting for volatility.

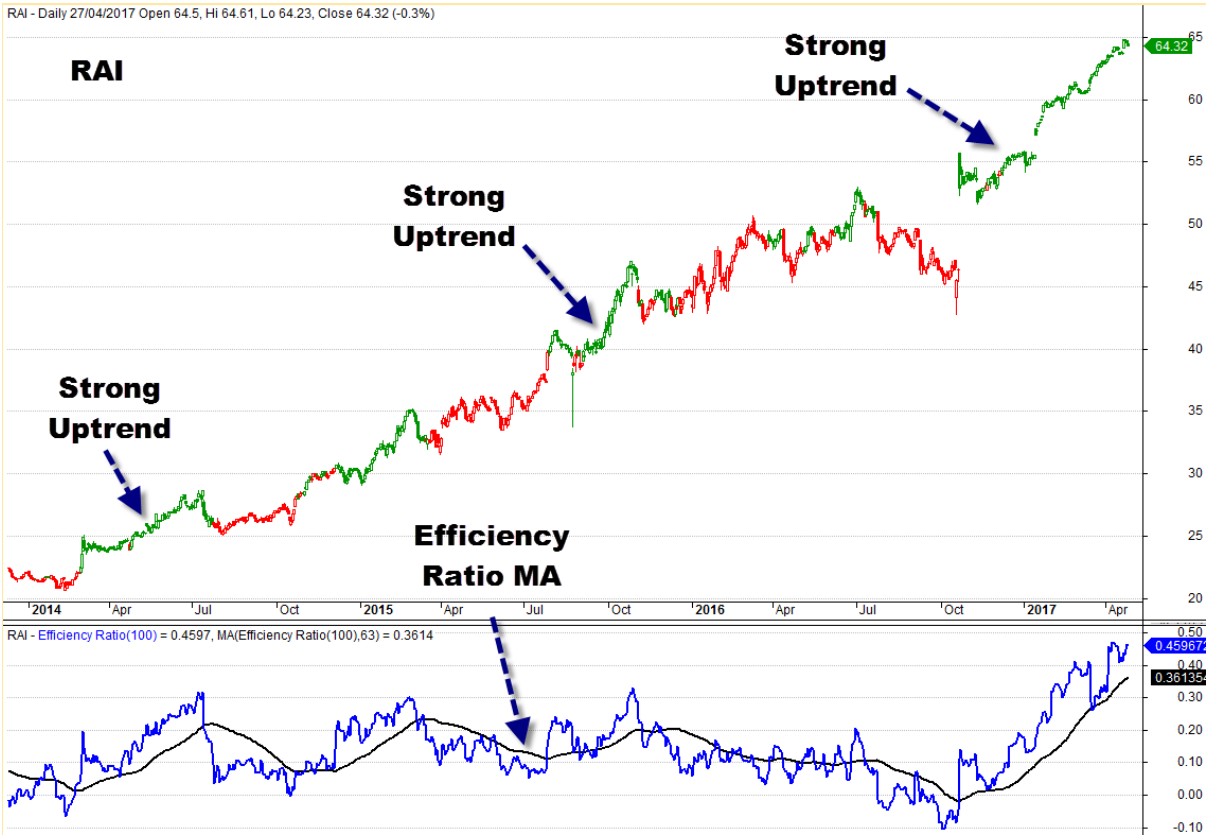
The calculation is as follows…

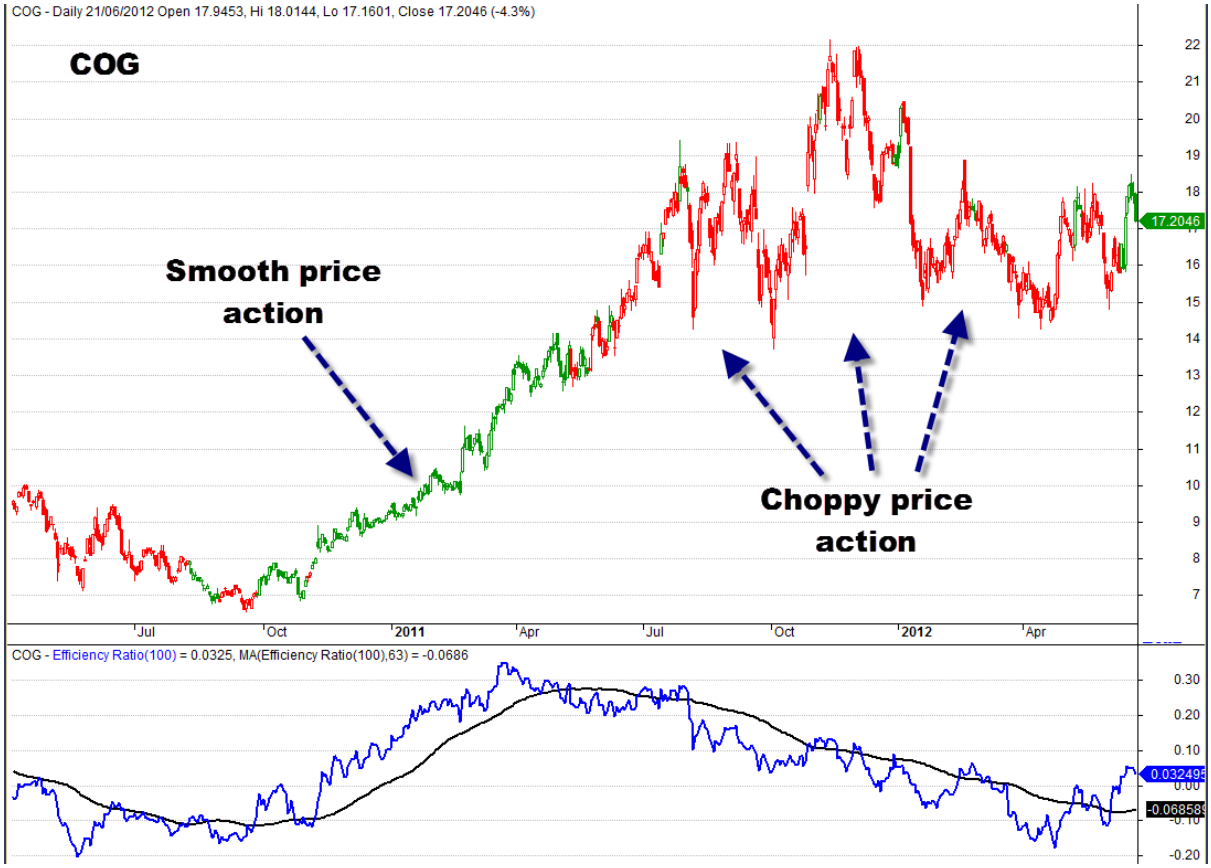
EfficiencyRatio = (Change in price over N-Periods) / Sum of ABS (individual price changes)

Simply put, the efficiency ratio measures the path taken between Price A and Price B. The smoother the path is, the higher the efficiency.

The following chart shows the 100 day efficiency ratio beneath the price series. Note that because the efficiency ratio is quite choppy I have also included a 63 day moving average.

When the ER moving average is sloping higher, the price candles are green and indicate a strongly up-trending environment. When the ER moving average is sloping lower, the price candles are red and indicate a choppy or down-trending market.





It can be seen from the above two charts that the efficiency ratio can be a useful tool because it helps to quantify both the direction and *type of trend*. This allows you to then better decide what type of strategy to employ.

As just one example, referring to above color-coded charts we might only decide to trade shallow pullbacks if the candles are green, or we might decide to trade deeper pullbacks or not trade at all if the candles are red.

Further, we can also apply the efficiency ratio filter to sector ETFs before deciding upon which specific stocks to trade.

For example, on the 12/04/17 we see that the sector with the highest efficiency ratio moving average (erma) value that is also sloping upwards is XLK (technology), and the sector with the lowest erma value that is also sloping downwards is XLE (energy).

Ticker	Date/Time	ERMA	ERMA Sloping Up?
XLF	12/04/2017	0.26117	NO
XLI	12/04/2017	0.23240	NO
XLK	12/04/2017	0.20606	YES
XLY	12/04/2017	0.19232	YES
XLB	12/04/2017	0.19162	YES
XLP	12/04/2017	0.07836	YES
XLV	12/04/2017	0.06725	YES
XLU	12/04/2017	0.06721	YES
XLE	12/04/2017	0.04840	NO

Armed with this information you might then decide to place a buy order for a tech stock such as AMZN, and you might decide to place a sell order for an energy stock such as APA.

In a later chapter we will expand on sector analysis a little more.

Swing trading setups

Now that we have a variety of methods for identifying a stock that is in a long term uptrend, we next need to identify which of those stocks have pulled back and presented a swing trading opportunity.

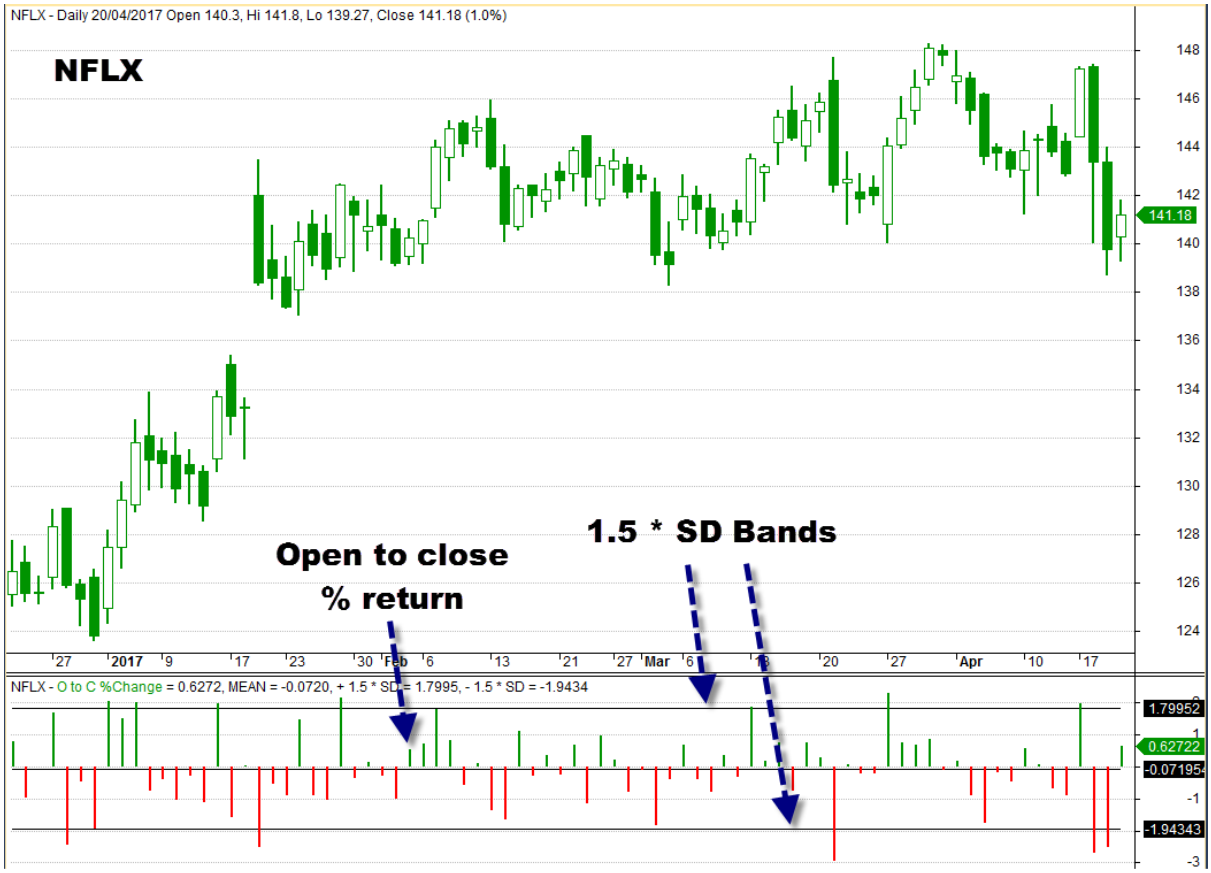
The way that I'll structure this part of the book is to first explain 3 simple swing trading setup and entry triggers.

Then I will move on to how you might want to frame a trade with regards to where you might place your stop-losses and profit targets, and then finally I'll explain how to size the positions.

Oversold Inside Bar Setup

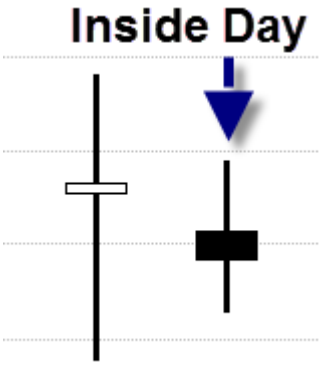
The first swing trading setup is simply an inside bar preceded by an oversold day. To define an oversold day we could use a variety of different indicators, but for this example we will simply identify an oversold day as one where the open to close return is less than 1.5 standard deviation below the mean open to close return of the past 100 days.

In the bottom pane of the following chart you can see the daily open to close % return and the mean and standard deviation bands.



Note to the right edge of the above chart that on April the 19th the open to close % return was less than 1.5 * SD beneath the 100 day mean. This is considered oversold.

The next criteria of the setup is that the oversold day is followed by an inside day. For those of you who are unfamiliar with charting terminology, an inside bar is simply a bar where the low price is greater than the previous low and the high price is less than the previous high.



Referring back to the above NFLX chart, we can see that the oversold day on the 19th April was followed by an inside day. This suggests that the selling pressure is not as strong as it first seemed.

Also note that the setup is particularly attractive because the oversold day presents itself at an area of prior price support (between $138 and $139).

Once the setup is identified, we place a buy-stop order above the high setup bar. Specifically, in order to avoid our buy-stops getting filled prematurely we calculate the average daily range of the past 10 days and then add 3% of that amount to the high of the setup bar.

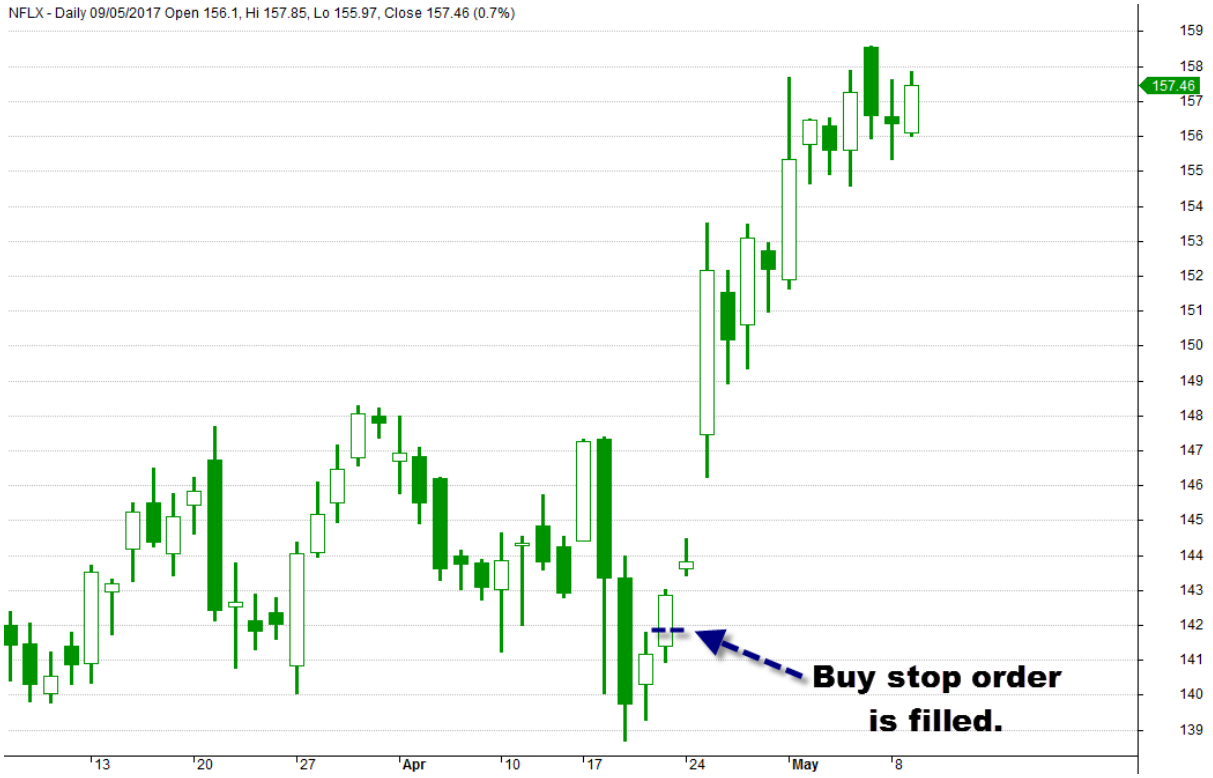
For example:

Average daily range past ten days = $3.09

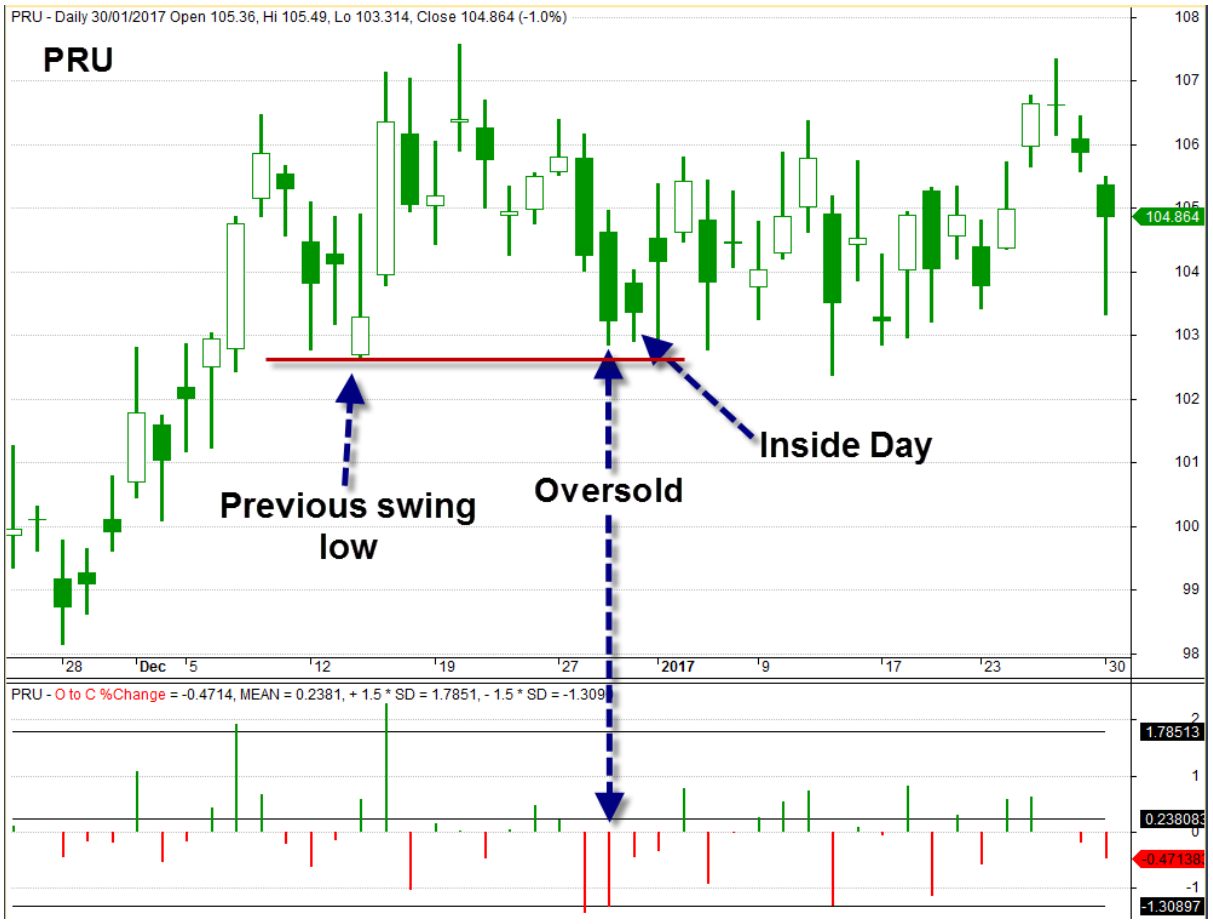
$3.09 * 0.03 = 0.09c

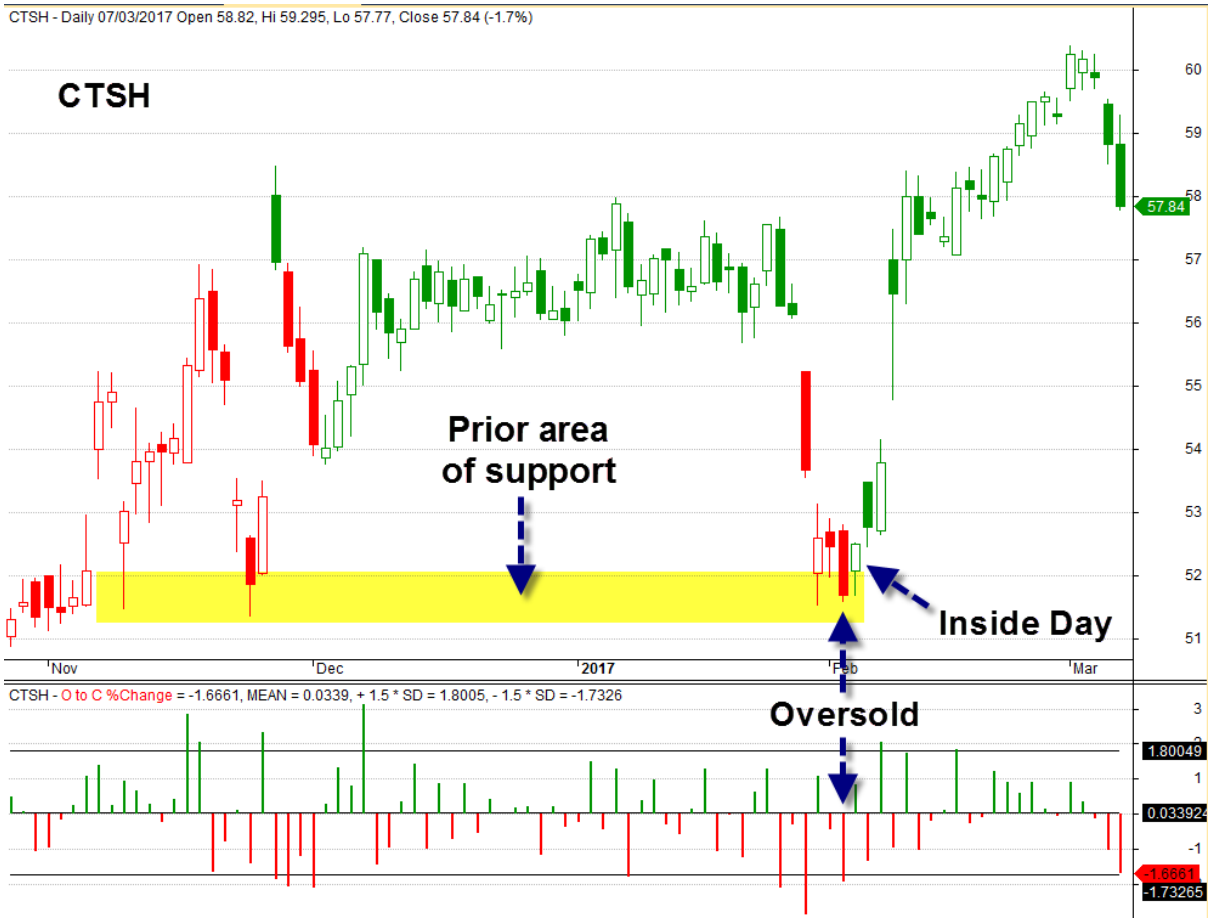
High of setup bar = $141.80

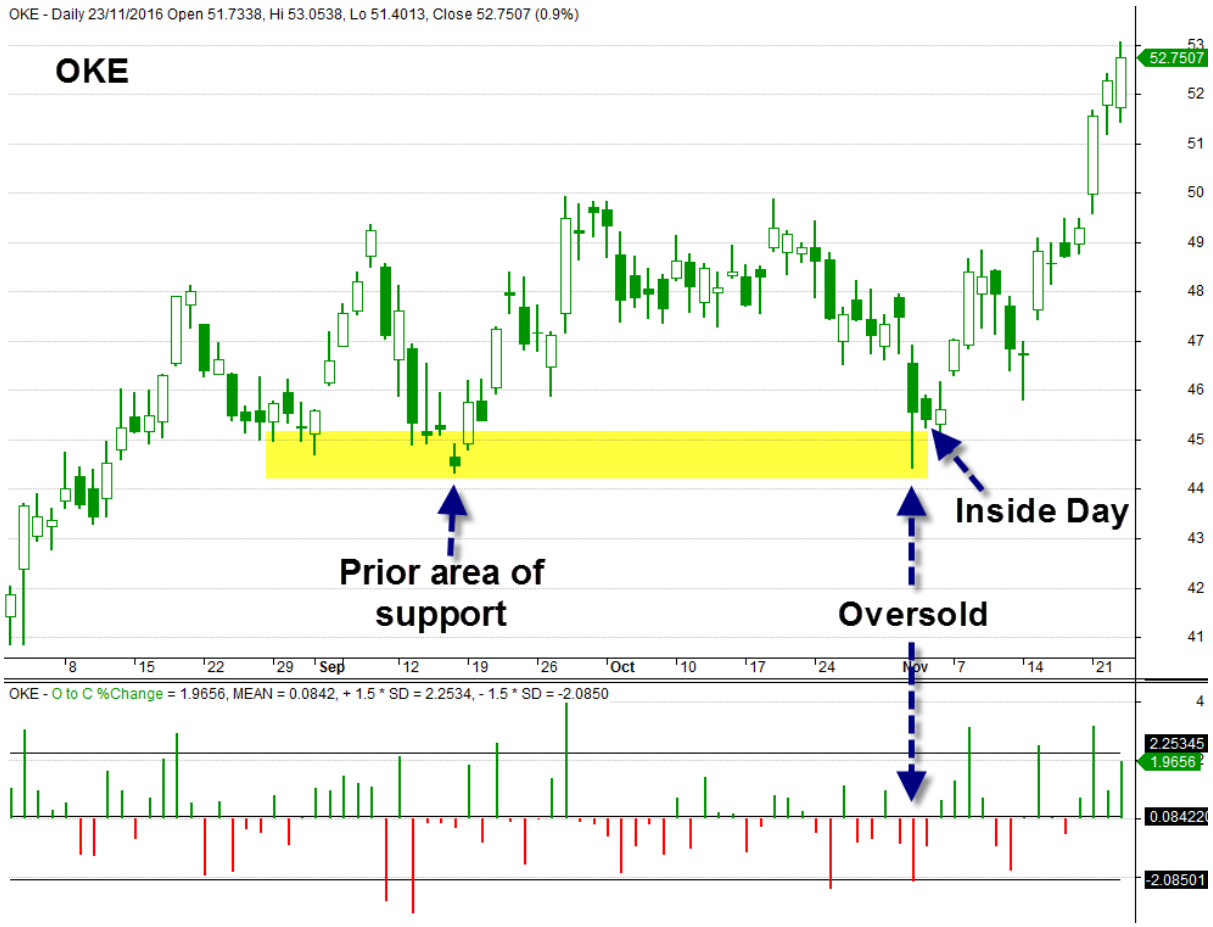
Buy stop order = $141.89



Beneath you will find a couple more examples of the oversold inside bar setup:




CTSH - Daily 07/03/2017 Open 58.82, Hi 59.295, Lo 57.77, Close 57.84 (-1.7%)
CTSH
Prior area
of support
Inside Day
Oversold
Nov
Dec
2017
Feb
Mar
60
59
58
57
56
55
54
53
52
51
57.84
CTSH - O to C %Change = -1.6661, MEAN = 0.0339, + 1.5 * SD = 1.8005, - 1.5 * SD = -1.7326
3
1.80049
1
0.033924
-1
-1.6661
-1.73265

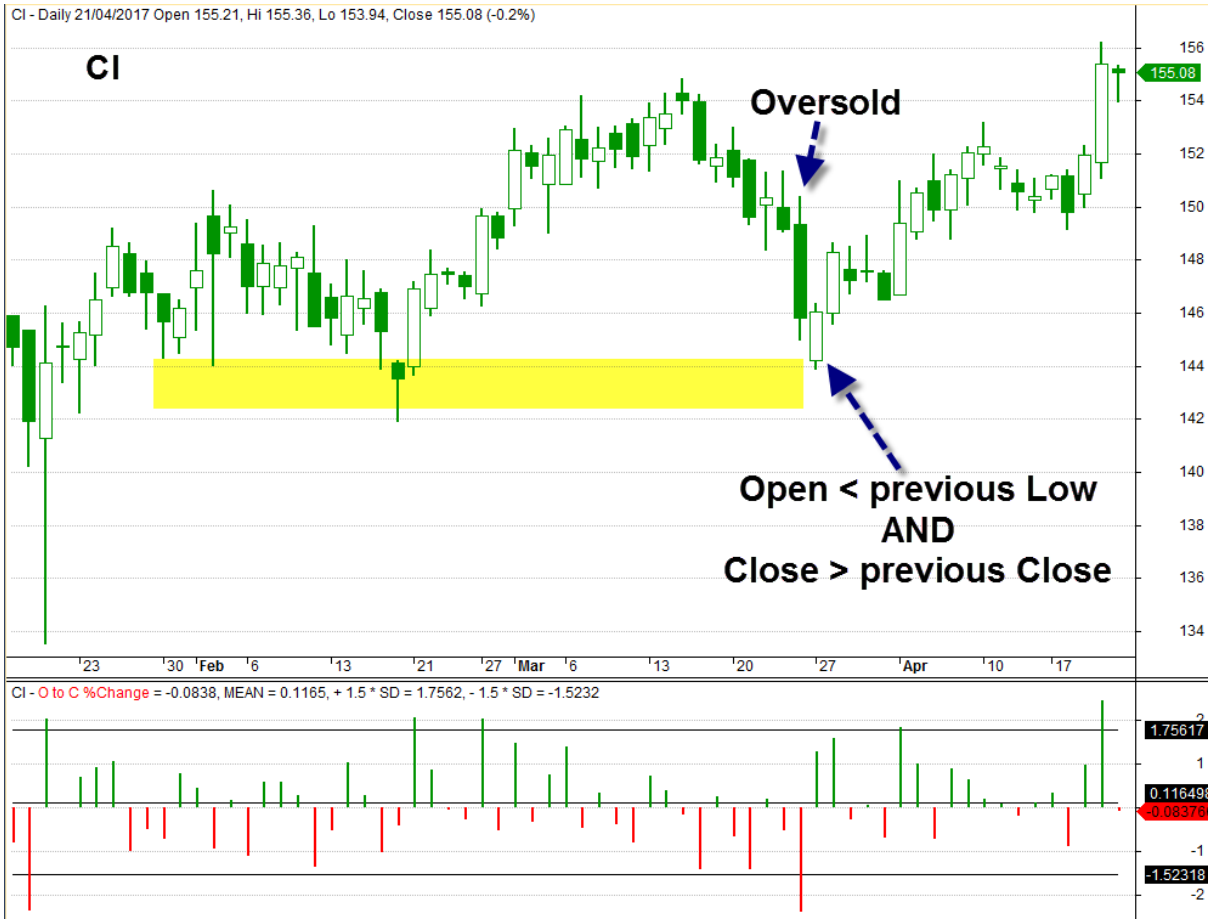


I should also point out that the there is nothing magic about the inside bar. Remember that the basic idea is to identify a significant down day that isn't followed by further weakness.

The inside bar is one pattern that provides evidence that sellers do not have significant control over the market, but there are many other patterns that can be searched for.

One such pattern is a day where the open is lower than the oversold day low but the close is greater than the oversold day close.

For example:



Another example of a pattern that suggests that the strength of sellers is waning can be found when the open and close are higher than the oversold day low, but the low of the day is lower than the low of the oversold day.

For example:

The point is that the specific criteria of the pattern are of less importance than the broader theme. That is to say, we are betting upon a reversal of an oversold day. Any pattern which follows an oversold day and that suggests that a reversal may be afoot is acceptable.

At the end of the book I will also explain how that you can quickly scan for any of the patterns that I have so far mentioned.

BTDR Setup

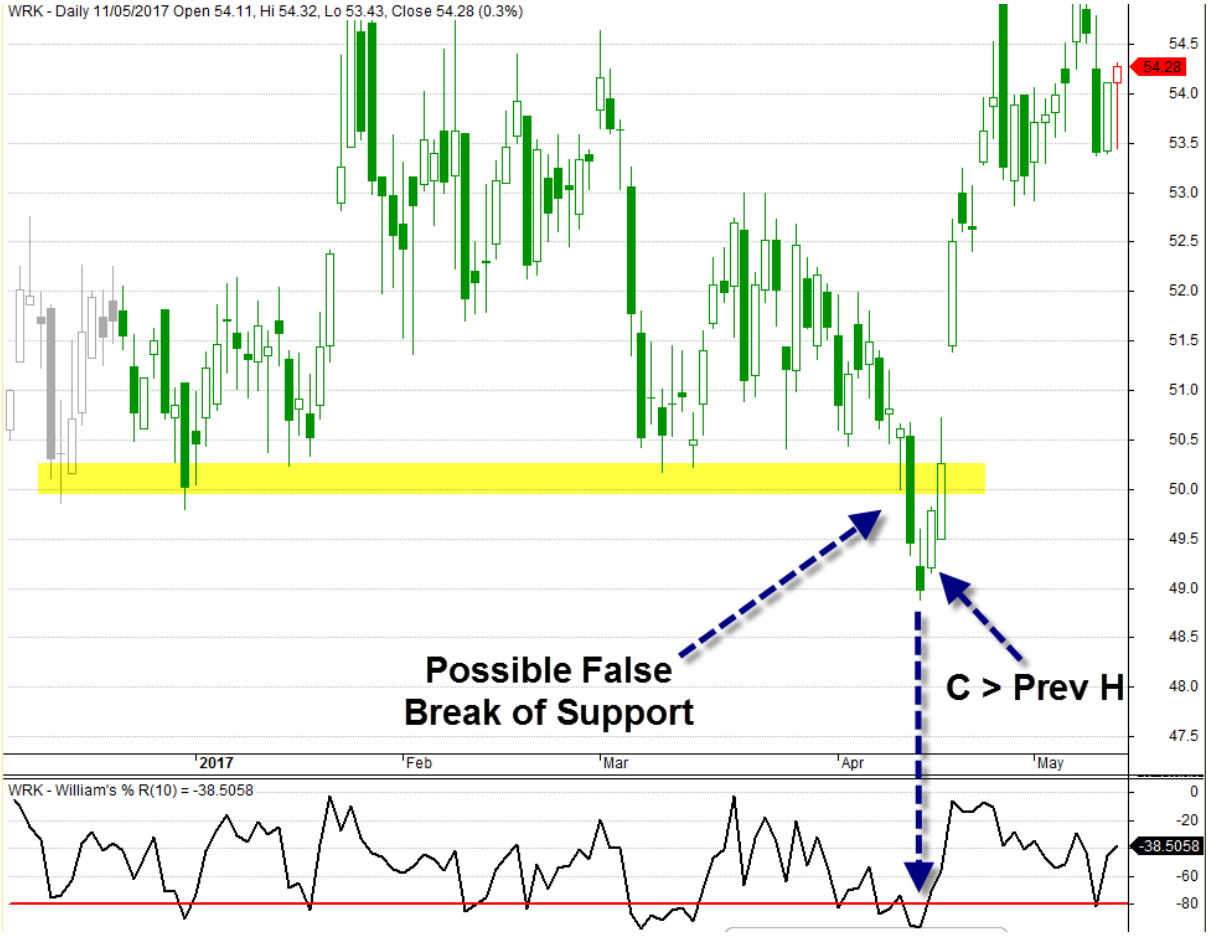
The second swing trading setup is produced when there is an up day that takes out the high of a day that closed in the bottom 20th percentile of the ten day high to low range.

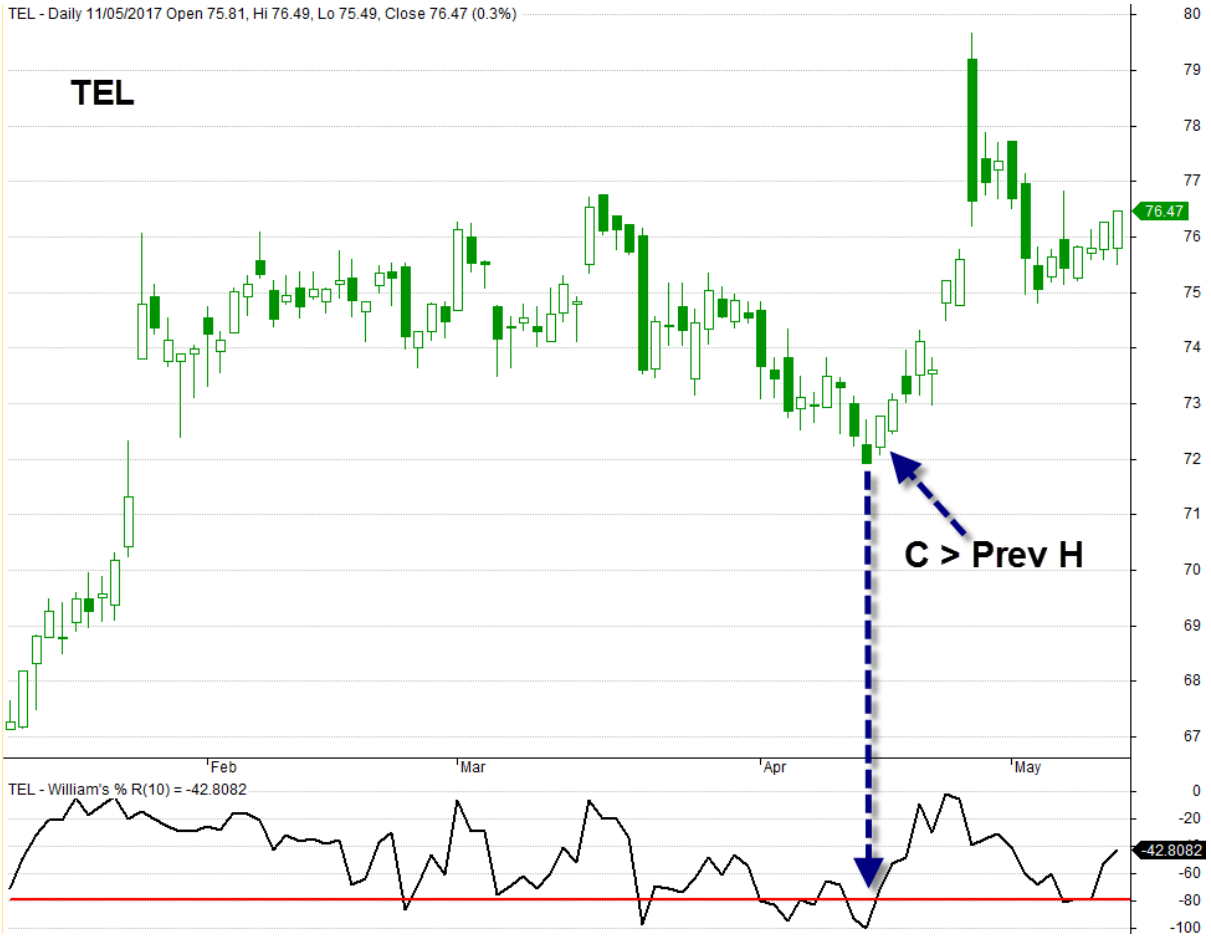
To quickly search for stocks that are trading in the bottom 20th percentile of the 10 day range we can use the Williams%R indicator.

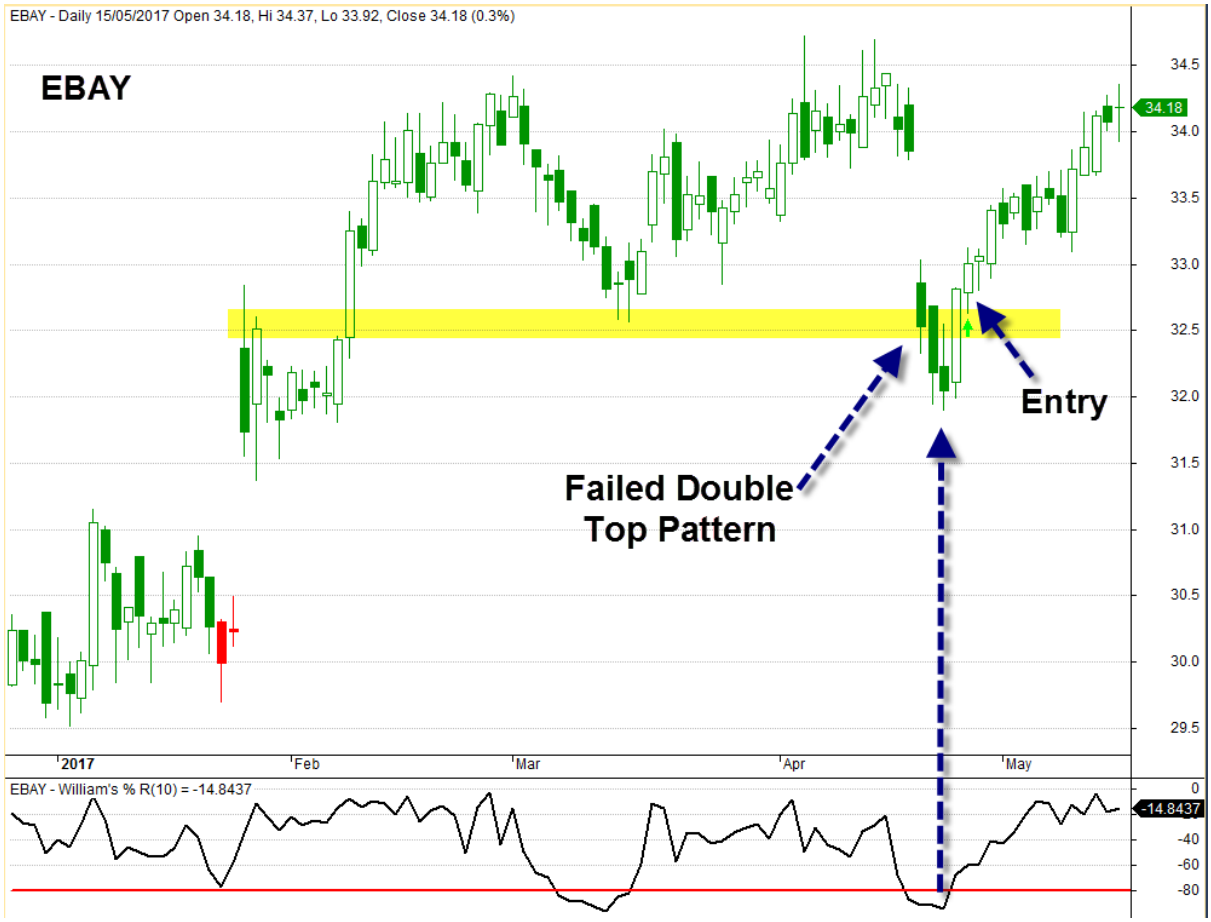
The following chart has the %R(10) indicator plotted in the bottom pane. Note that when the %R is below -80 it indicates that the closing price is in the bottom 20th percentile of the 10 day range.

Once we have identified those stocks which have a Williams%R value below -80, the next criteria of the setup is that the following day is a positive day and closes higher than the previous high.

For example:


WRK - Daily 11/05/2017 Open 54.11, Hi 54.32, Lo 53.43, Close 54.28 (0.3%)
54.28
Possible False
Break of Support
C > Prev H
2017
Feb
Mar
Apr
May
WRK - William's % R(10) = -38.5058
-38.5058


TEL - Daily 11/05/2017 Open 75.81, Hi 76.49, Lo 75.49, Close 76.47 (0.3%)
TEL
C > Prev H
Feb
Mar
Apr
May
TEL - William's % R(10) = -42.8082
80
79
78
77
76.47
76
75
74
73
72
71
70
69
68
67
0
-20
-42.8082
-60
-80
-100



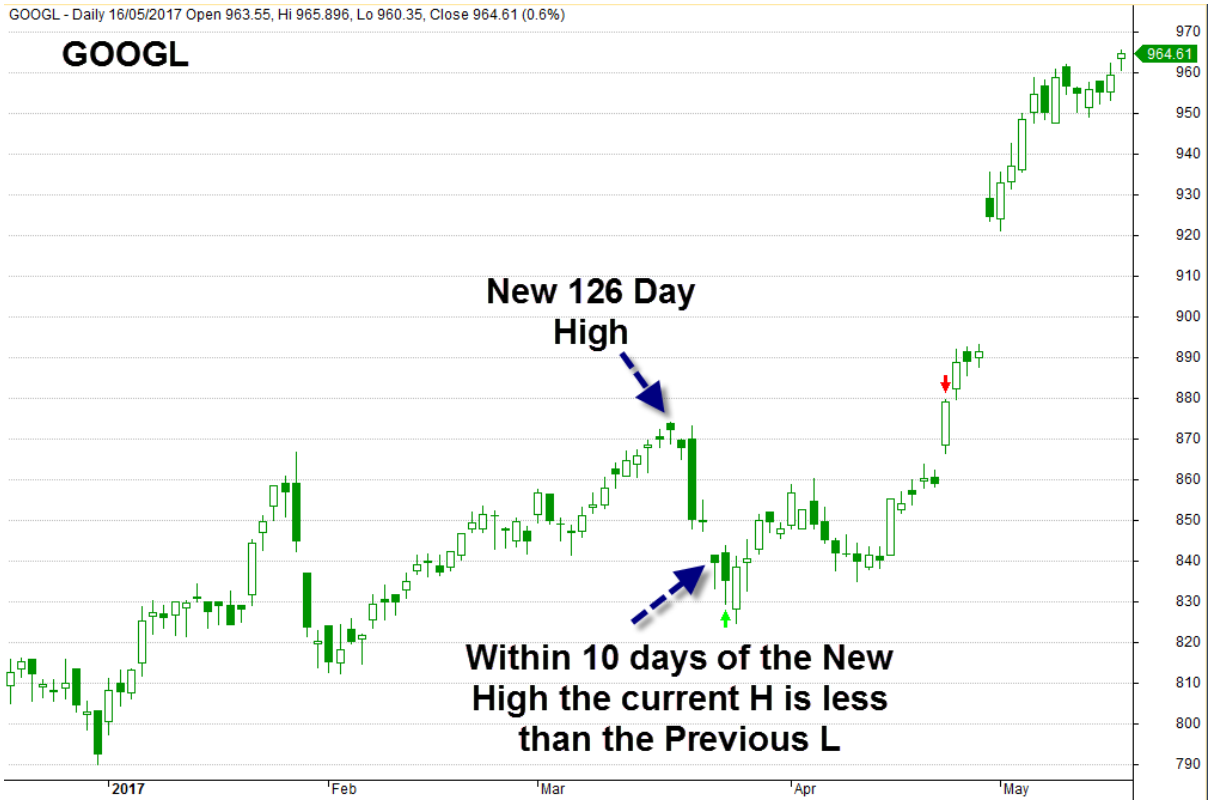
As with the previous strategy, once the BTDR setup is identified a buy stop order is placed just above the high of the setup bar. This helps to prevent the buy order from being filled if the price of the stock trade does not rally higher during the next few days following the signal.

NHGD

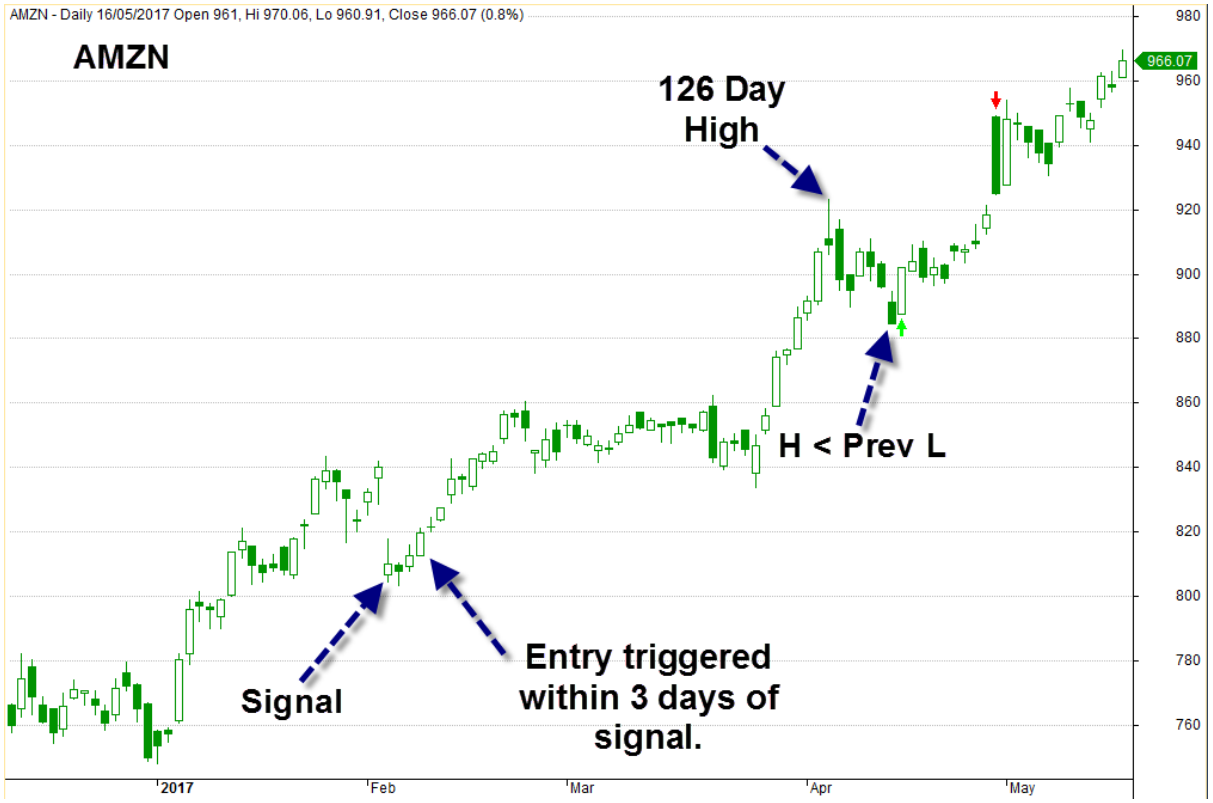
The NHGD setup identifies a stock that has recently made a new high and then had a gap down whereby the high price is lower than the previous day's low.

Once the setup is identified a buy stop order is placed a few cents above the setup bar high.

The following example setups were produced if there had been a gap down within 10 days of a 6 month high, although you could just as easily use 3 month highs, yearly highs, and so on.



Note in the following couple of examples that as long as your initial profit target and stop-loss allow for a reasonable risk/reward ratio upon entry, you can also keep the buy stop order in the market for a few days in anticipation that the market will reverse higher and continue its uptrend.

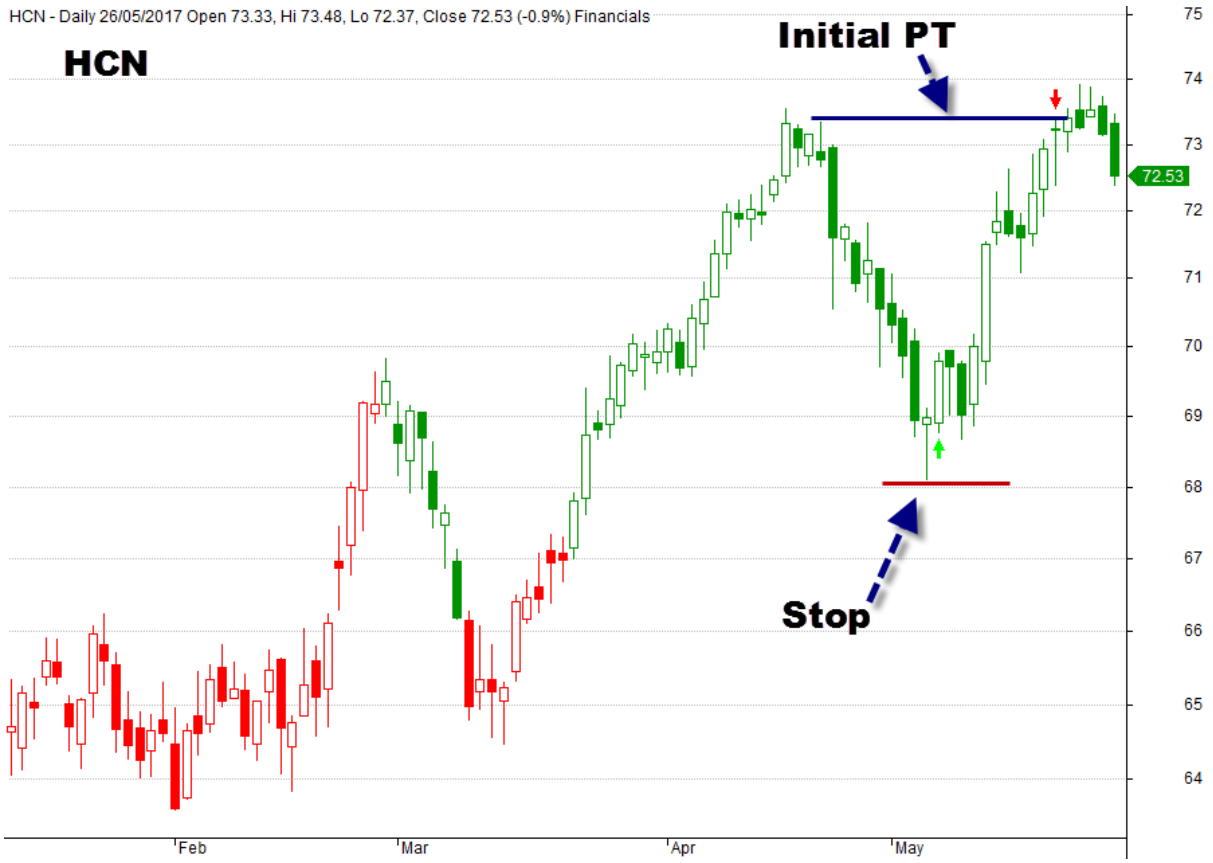


Stop-losses and Profit targets

For the previous 3 swing trading setups the initial stop-loss will be placed just below the lowest low of the past 3 days and the initial profit target will be placed at the highest price of the past 10 days.

For example:

CHTR - Daily 26/05/2017 Open 334.38, Hi 338.91, Lo 333.01, Close 337.44 (1.1%) Consumer Cyclicals
CHTR
Initial Profit target
Stop-Loss
337.44
355
350
345
340
335
330
325
320
315
310
305
300
295
Feb
Mar
Apr
May


HCN - Daily 26/05/2017 Open 73.33, Hi 73.48, Lo 72.37, Close 72.53 (-0.9%) Financials
HCN
Initial PT
Stop
72.53
75
74
73
72
71
70
69
68
67
66
65
64
Feb
Mar
Apr
May

One of the main advantages of defining an initial stop-loss and profit target is that you can then seek out opportunities whereby the amount of money that you'll gain from a winning trade is larger than the amount of money that you might lose from a losing trade.

This is otherwise known as a risk to reward ratio and because the odds of a profitable swing trade are usually 50% at best, it's important to ensure that the risk to reward ratio that you accept from a trade setup is positive.

In practice, this means scanning the market for signals and then using the initial profit target and stop-loss to sort the results in order of the most attractive risk to reward ratio first.

For example, a scan of the market today finds 7 signals with differing risk to reward ratios.

All else being equal, the most attractive trade setups from today's list would therefore be each of the stocks with a risk to reward ratio (seen in the final column) greater than 2:

Ticker	Date/Time	Setup	GPR	rank	EntryStop	Initial-StopLoss	InitialPT	R:R
BF.B	26/05/2017	OSIB	1.46	3.00	51.75	50.89	59.50	9.01
TIF	26/05/2017	BTDR	1.27	4.00	85.81	83.63	93.88	3.70
HPQ	26/05/2017	OSIB	1.75	1.00	18.41	18.06	19.43	2.91
DD	26/05/2017	OSIB	1.19	5.00	78.09	77.09	80.40	2.31
DOW	26/05/2017	OSIB	1.18	6.00	61.19	60.35	62.96	2.11
ARNC	26/05/2017	OSIB	1.70	2.00	27.58	27.06	28.65	2.06
GT	26/05/2017	BTDR	1.13	7.00	32.65	31.31	34.43	1.33

Another exit method that you're probably already familiar with involves moving the stop-loss to breakeven when the profit on the trade is equal to or greater than the initial amount that you were willing to lose.

For example, if your stop-loss is $1 below the entry price, you would move the stop-loss to breakeven if the stock prices rallies by at least $1 after entry.

In the following chart there was signal on the 3rd of May. The following day, the buy-stop order was triggered at $126.98 with an initial stop-loss at $125.49.

The distance between the entry and stop-loss was therefore (126.98 – 125.49) $1.49.

Using the above trade management system we see that once the stock rallied by $1.49 (point A) the stop-loss would be moved to the breakeven point (the red line). This meant that the position would have been closed at point B.

The purpose of moving a stop loss to breakeven is obviously to prevent a winning trade from becoming a losing trade. However, one of the main problems with moving a stop-loss to breakeven is that the breakeven point is arbitrary and not based upon any significant pattern or price level.

As the above chart illustrates, a better approach if you want to lock in profits or reduce the amount you would lose if stopped out of the position is to only move the stop-loss up if there is a logical price level to move the stop-loss up to.

As one example, you might only move the stop loss higher if the price makes a new swing low point while you are in the position.

Using the previous chart to illustrate the approach, instead of simply moving the stop-loss to breakeven when the price rallied by $1.49, we would instead be on the lookout for a logical price level of support to move our stop-loss to.

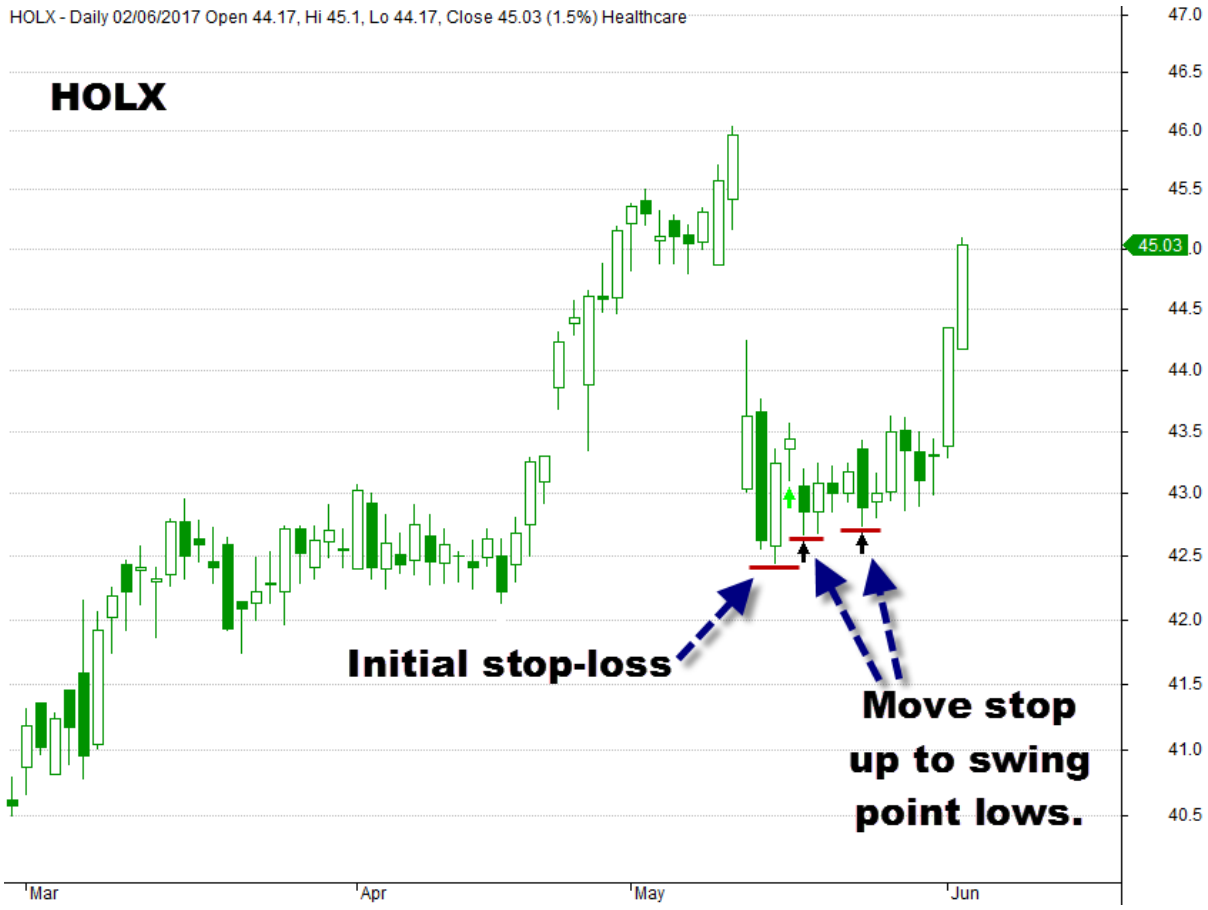
One such logical price level can be found at a swing point low.

Whilst there are many methods to define a swing point low, a simple and quantitative method is to define a swing point as a 3 day pattern where the bar 2 low is lower than the low of bar 1 and bar 3, and the bar 1 and bar 3 close are greater than the bar 2 close.

In the example this would mean moving the stop-loss once a swing point was identified (highlighted in yellow):

If the price were to then fall below the swing point low then we could reasonably assume that the stock was losing strength and we'd be better off moving our resources to a more attractive position.

Another example of moving the stop-loss up when a swing point low is identified can be seen in the following chart:



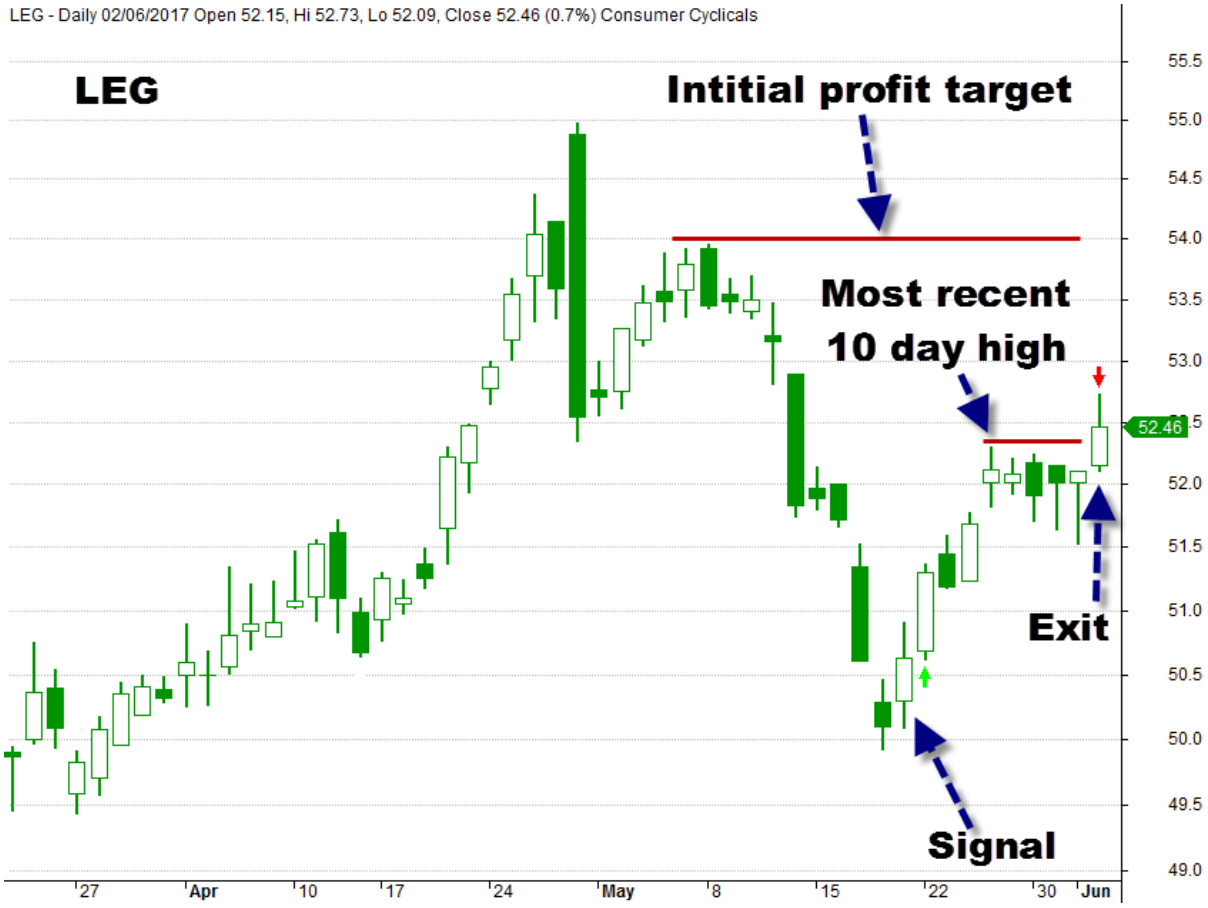
Further, some positions that you might enter may stay flat for an extended period of time.

The simple approach to managing a trade that is going nowhere is to have a time based stop-loss as well as a price based stop-loss.

This means that if neither your profit target nor stop-loss is executed within 3-4 weeks, you either exit the position immediately or move your stop-loss to a very near price point such as the previous day's low.

Another approach is to move the profit target to the most recent 10 day high as opposed to the 10 day high at the time of the entry.

For example:



The caveat to the above approach is that if you are going to lower the potential profit from the trade, you also need to ensure that you reduce the amount that that you might lose if the trade goes south.

This is important because otherwise your initial risk to reward ratio might become too unattractive. For example, the initial stop-loss in the above chart would have been placed at $49.88, the entry price was $50.92 and the initial profit target was $53.95.

This produced a risk to reward ratio of 2.91.

If whilst in the position we then moved the profit target to the most recent 10 day high at $52.30, the risk reward ratio of the position would become 1.32. This is acceptable, but wouldn't have been if lower than 1.

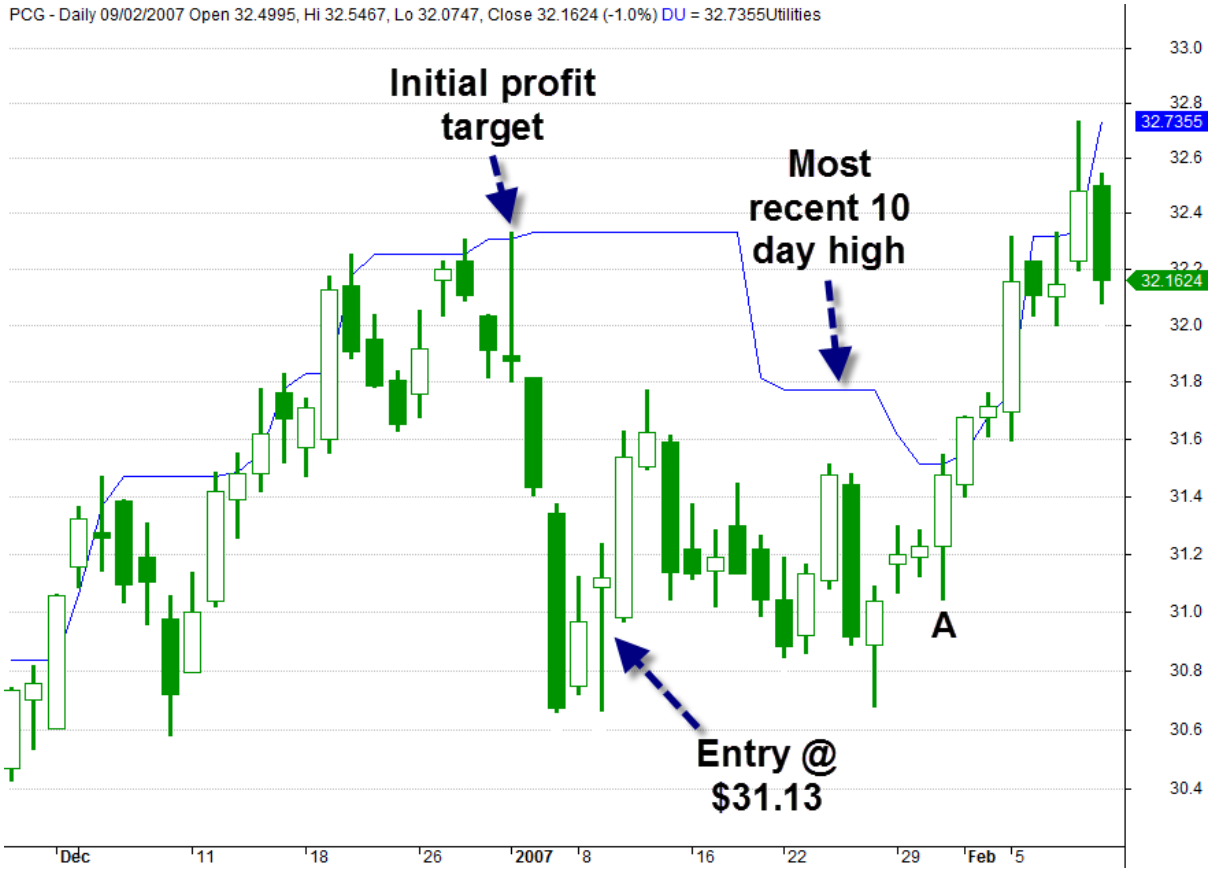
The next chart illustrates when you might not want to move the profit target down to the most recent 10 day high.

Note that the initial stop-loss was $30.61 and the entry price was $31.13. This meant that if we were stopped out of the position at the initial stop-loss price, the amount we would have lost per share was $0.52.

Knowing this, we would only move the profit target to the most recent 10 day high if it were at least 52 cents higher than our entry price at (31.13 + 0.52) $31.63.

At point A in the following example the most recent 10 day high was $31.51, so we would not have exited at the most recent 10 day high because the amount of profit from the trade would have been less than the amount we would have lost if stopped out at the initial stop-loss price.

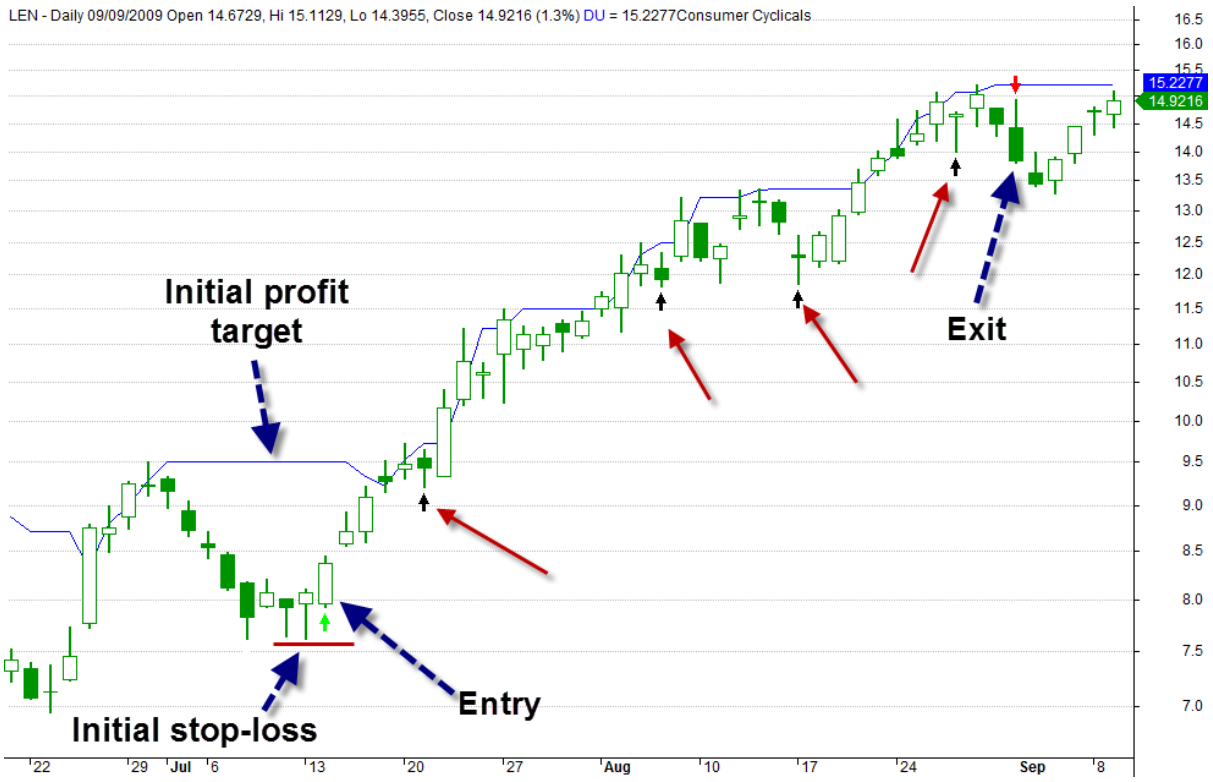
It was only on the bar following point A that the most recent 10 day high became $31.68 and we could have then moved the profit target without producing a negative risk to reward ratio on the position.



Another approach for a managing an open position is to use the initial profit target and stop-loss to identify good risk to reward ratio trade idea, but then once in the position you might want to ignore the profit target and simply use a trailing stop as long as the position keeps making a profit.

The purpose of the trailing stop-loss being that you protect any gains made throughout the duration of the trade whilst also allowing unlimited profit potential.

In the following example you can see that instead of exiting at the initial profit target, a significantly larger gain was made by placing a trailing stop-loss beneath each new swing point low.



Of course, how you decide to manage an open position will in large part be determined by the market type that you are operating in.

If the overall market or sector that a stock belongs to is bullish, then you will have more success using a trailing stop-loss.

If the overall market or sector that a stock belongs to is bearish or sideways, then you will have more success when exiting at predefined profit targets.

Being able to quantitatively determine the different market types will be explained in more detail during the next chapter.

Position-Sizing

Once you have identified a signal and determined where to place your stop-loss you need to next determine how many shares to buy.

To do this you must first calculate the distance between the entry price and the stop-loss. This is the amount that you would lose per share if your stop-loss was executed.

You then need to define how much money you are willing to lose on the position if your stop-loss is executed. For the following examples we'll assume that the amount is $200.

So the amount of shares to place an order for would be calculated as:

$200 / (Buy-stop price – Stop-loss price)

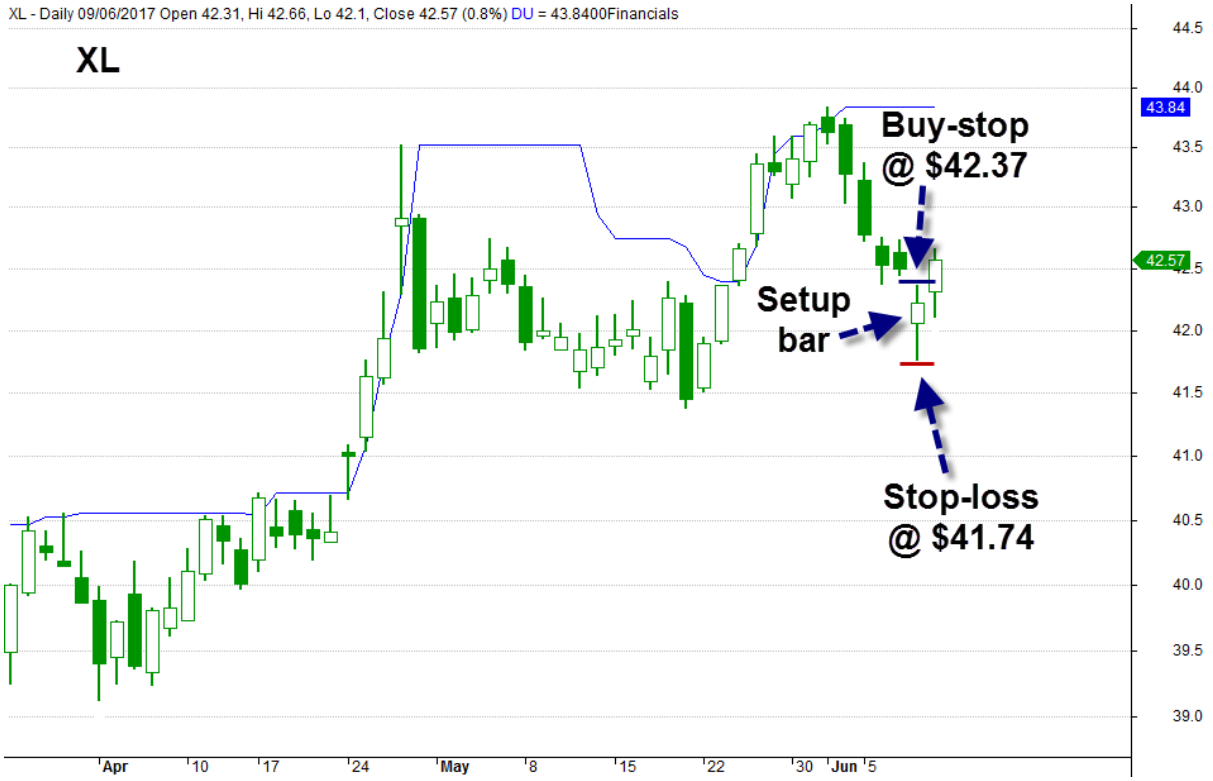
The following chart shows a setup with both the buy-stop price and stop-loss price if the buy-stop order is executed:

In the above example we would therefore buy 204 shares.

$200 / ($114.20 - $113.22)

The following chart provides another example. Note that the amount of shares to buy would be calculated as:

$200 / ($42.37 - $41.74)



Note that calculating the correct amount of shares to buy needn't be a chore and if you invest in good charting software such as provided by Amibroker then you can program the software to automatically calculate the correct position sizing for you.

For example, the following Amibroker screener automatically finds any trade setups, then calculates where to place buy-stop orders and stop-loss orders, then calculates the risk to reward ratio, and finally calculates how many shares to buy assuming a target of $200 loss if stop loss is executed:

Ticker	Date/Time	Setup	GPR	rank	EntryStop	Initial-StopLoss	InitialPT	R:R	NumSharesToBuy $200 Risk Per Trade
HSY	09/06/2017	OSIB	1.44	1.00	114.20	113.22	116.49	2.34	204.00

With the above said, it's important to recognise that a position can often gap-down and cause your stop-loss order to be executed at a worse price than you had planned for.

For example, in the following chart we can see that a position was opened in the beginning of November. The entry price was $32.19 and the initial stop-loss order would have been placed at $31.43.

If a trader wanted to lose no more than $200 if their stop-loss order was executed, then they would have bought 263 shares using the following position-sizing formula:

$200 / ($32.19 - $31.43)

This means that the position would have cost (263 * $32.19) $8466.

But as we can see, the 21% overnight gap-down resulted in the stop-loss order being executed at $25.39 instead of the $31.43 that was originally planned for.

This means that instead of losing $200 on the position, the trader would have actually lost $1788!

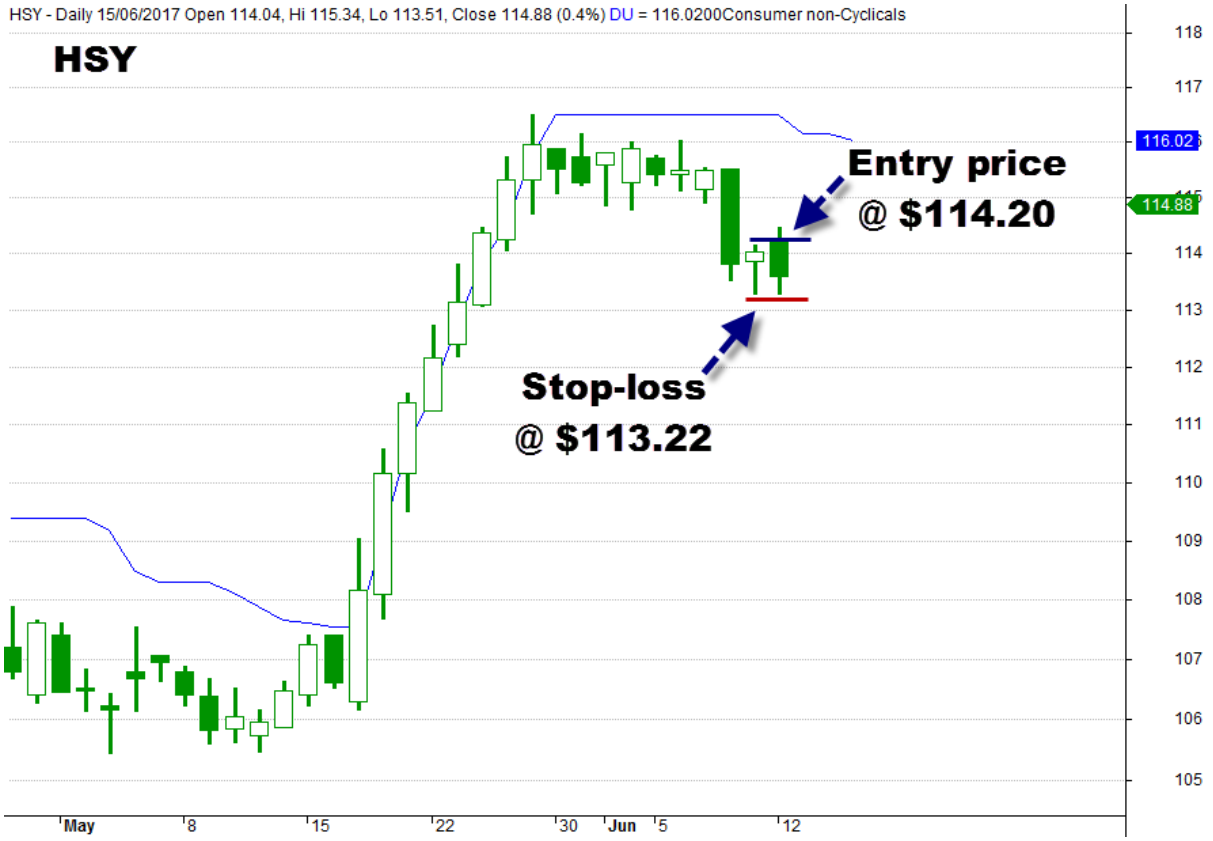
This brings us to a very important point. Note that most popular trading books and online articles suggest that an appropriate amount of risk to take per trade is 2% of available equity.

In the above example we can see that $200 would be 2% of a $10,000 account. So buying $8466 worth of shares would result in this single position controlling a whopping **84.6%** of your total portfolio equity.

A more extreme example can be seen in the following chart. The difference between the entry price and stop-loss is $0.98. If we again assume that a trader controls a $10,000 account and they want to limit the loss of a position that gets stopped out to 2% of available equity.

The amount of shares that that they place an order for would therefore be calculated as:

($10,000 * 0.02) / ($114.20 - $113.22)



So the actual size of the position would be (204 * $114.20) $23,296.80.

Note that this would require the owner of a $10,000 account to use margin and is **clearly not** an appropriate way to manage your portfolio.

Let's next presume that the above order for Hershey shares was executed, and then 3 days later there is overnight news that their entire chocolate bar range has been found to contain E-Coli and salmonella.

The stock might gap down by 25% and in doing so cost the trader $5824.20.

If your account size is $10,000, that equates to a loss of 58.2%. From just one trade!

With that said, a better approach to risk management is to also limit the **total cost** of a position to no more than 30% of available equity, or preferably even less if you're trading a larger account.

In the Hershey example, capping the total cost of a position to 30% would mean that we could not buy more than $3000 worth of shares.

Having this cap would mean that a 25% gap down would only equate to a 7.5% loss of the account. This is obviously still bad, but it wouldn't be devastating.

The problem now is that the trader can only buy 26 shares ($3000 / $114.20). This means that if they were to exit at the initial profit target of $116.49 then the most that they could gain from the position is $59.54.

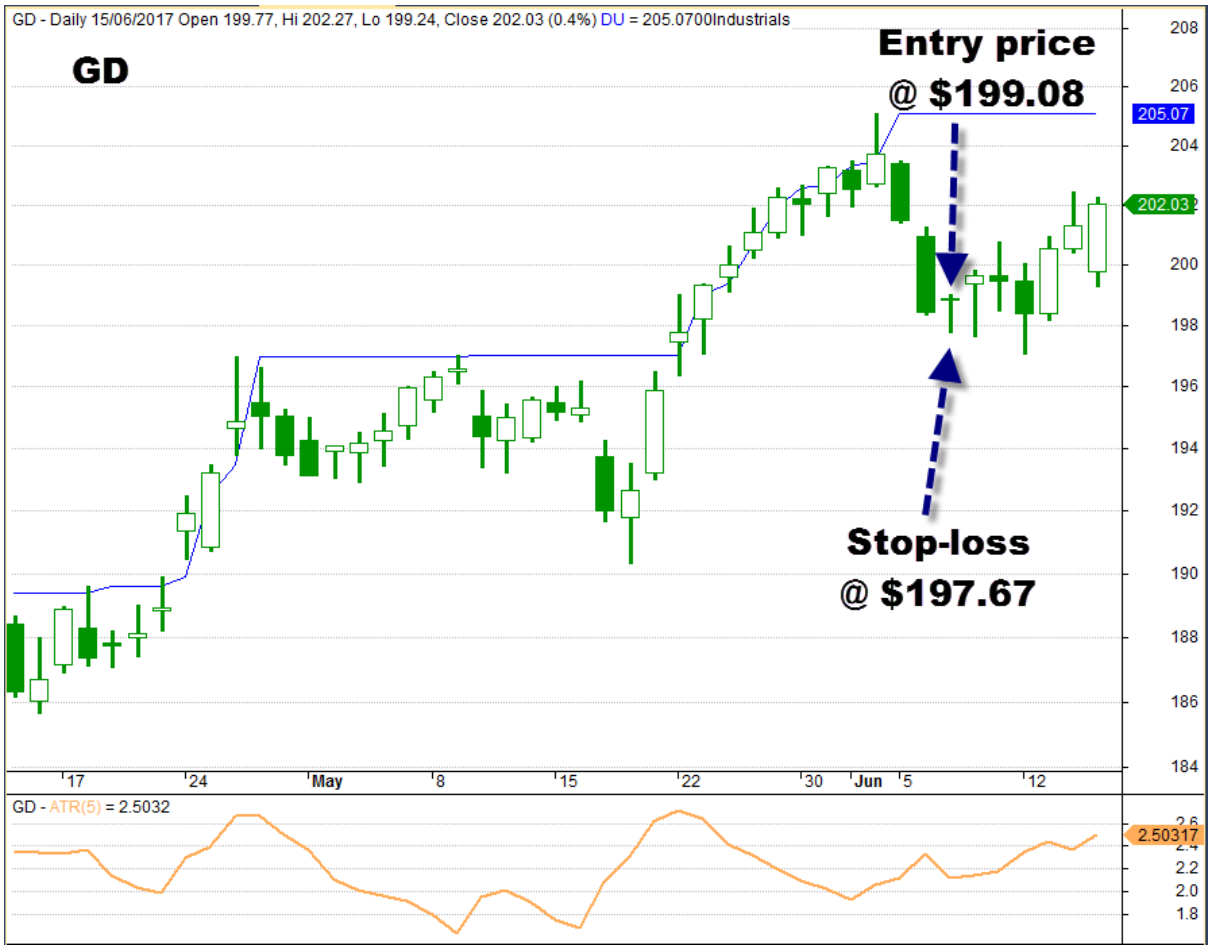
This illustrates how absurd the claims are that you might be able to carve out a living from swing trading a $10,000 account.

The reality is that without taking insane amounts of risk and using excessive margin, the best that you can do is to systematically build your account one trade at a time and over a period of years as opposed to weeks or months.

Further, you'll often find trade setups where the initial stop-loss is very close to the buy-stop price.

For example, in the following chart we can see that the distance between the entry price and the initial stop-loss is $1.41. Taken as a percentage of the cost per share, this is 0.7%.

However, if we look at the bottom pane of the chart we can see the Average True Range is $2.12. Taken as a percentage of the cost per share, this is 1.06%.



This suggests that a stop-loss which is only $1.41 beneath the entry price doesn't adequately compensate for the normal day to day volatility of the stock.

A more conservative approach for placing a stop-loss order is therefore to place it at the minimum of these two figures:

1. **Initial Stop-Loss**.

2. **Entry Price – (ATR*1.10).**

In the above example the initial stop-loss price was $197.67.

The entry price minus ($2.12*1.10) was $196.74.

We'd therefore place the stop-loss order at the minimum of those two figures; $196.74.

Again, calculating this needn't be too time consuming and if your charting software has a MIN() function then you can include a line of code in your formula which does the number crunching for you.

For example, the following Amibroker exploration provides a column for the "Actual Stop Loss" which automatically calculates the minimum of the "Initial Stop-Loss" or "ATR Stop-loss".

Ticker	Date/Time	Setup	rank	EntryStop	Initial-StopLoss	ATR StopLoss	Actual StopLoss	InitialPT	R:R
ALB	15/06/2017	NHGD	3.00	108.06	103.57	104.55	103.57	116.30	1.84
AMZN	15/06/2017	NHGD	1.00	966.39	926.34	938.52	926.34	1,016.50	1.25
JNPR	15/06/2017	OSIB	5.00	29.01	27.99	28.25	27.99	30.44	1.40
MA	15/06/2017	NHGD	2.00	121.68	119.84	119.52	119.52	126.19	2.09
STX	15/06/2017	OSIB	4.00	41.68	40.29	40.30	40.29	43.53	1.33

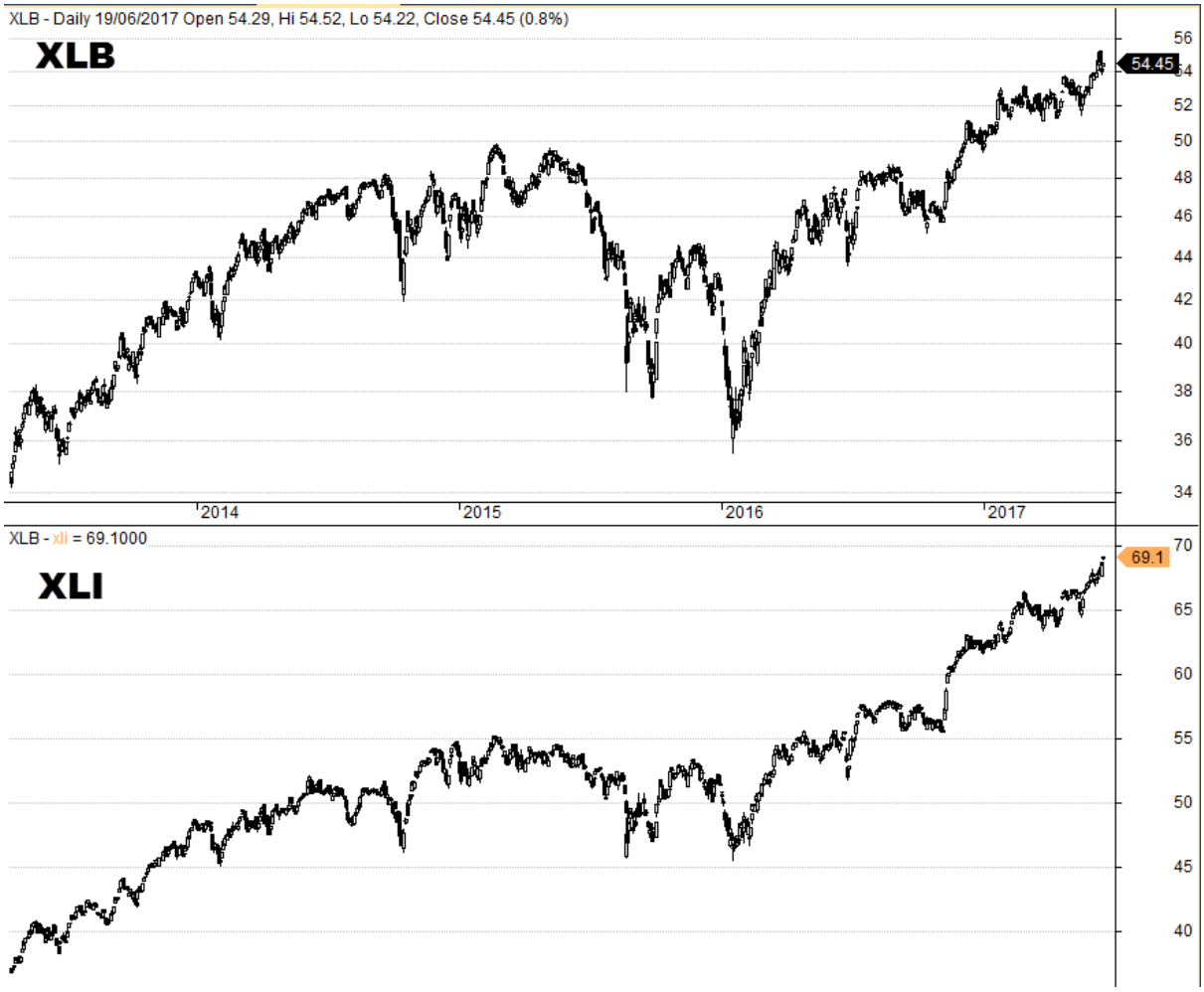
Finally, you must also recognise that the internal correlation of equity markets is pretty high. For example, the following correlation matrix tells us the 252 day correlation between each of the 9 major equity market sector ETFs:

Corr(252)	XLB	XLE	XLF	XLI	XLK	XLP	XLU	XLV	XLY
XLB		0.64	0.72	0.83	0.64	0.35	0.10	0.55	0.71
XLE	0.64		0.54	0.57	0.36	0.24	0.10	0.35	0.41
XLF	0.72	0.54		0.81	0.52	0.20	-0.14	0.57	0.65
XLI	0.83	0.57	0.81		0.67	0.40	0.11	0.59	0.77
XLK	0.64	0.36	0.52	0.67		0.55	0.24	0.55	0.78
XLP	0.35	0.24	0.20	0.40	0.55		0.64	0.34	0.51
XLU	0.10	0.10	-0.14	0.11	0.24	0.64		0.13	0.18
XLV	0.55	0.35	0.57	0.59	0.55	0.34	0.13		0.56
XLY	0.71	0.41	0.65	0.77	0.78	0.51	0.18	0.56	

Note that the average correlation co-efficient taken from the above table is 0.52.

However, note that some sectors are more highly correlated than others. For example, Industrials (XLI) and Materials (XLB) have a correlation co-efficient of 0.83.

This is a very strong correlation and suggests that the Industrials and Materials sectors move in lock step with one another. Perhaps this point is more evident in the following price chart:



Further, I'm writing this on the 20/06/2017 and it so happens that the current market environment is bullish and showing little sign of volatility.

If on the other hand the market were bearish or more volatile, it is likely that the correlations between the sectors would be higher still.

For example, the following correlation matrix was produced just before the significant market correction in August 2015.

Note that the average correlation co-efficient from the below table is now 0.67. This is high and illustrates that during periods of increased volatility the internal correlation of the stock market tends to become stronger.

Corr(252)	XLB	XLE	XLF	XLI	XLK	XLP	XLU	XLV	XLY
XLB		0.74	0.73	0.83	0.74	0.63	0.34	0.67	0.73
XLE	0.74		0.50	0.63	0.48	0.36	0.25	0.41	0.48
XLF	0.73	0.50		0.83	0.79	0.73	0.37	0.75	0.83
XLI	0.83	0.63	0.83		0.84	0.71	0.41	0.76	0.82
XLK	0.74	0.48	0.79	0.84		0.70	0.38	0.73	0.79
XLP	0.63	0.36	0.73	0.71	0.70		0.58	0.73	0.73
XLU	0.34	0.25	0.37	0.41	0.38	0.58		0.46	0.39
XLV	0.67	0.41	0.75	0.76	0.73	0.73	0.46		0.75
XLY	0.73	0.48	0.83	0.82	0.79	0.73	0.39	0.75	

It is therefore important when calculating the size of a position to look at the portfolio as a whole as opposed to a combination of separate positions.

The reality is that if you are only buying equities it's common that if the overall market is up today, the majority of your positions will be up. If the overall market is down today, the majority of your positions will be down.

This means that 5 individual positions where the amount lost if stopped out is $200 per position, is for the most part a single $1000 bet on the market going up.

I'm simplifying the above point to an extent, for example if all of your positions are from the a single sub-industry then the above point is obviously far more true than if 5 positions are all from different sectors, belong to different market capitalisation groups, belong to different theme ETFs (i.e. Value or momentum) have different exposures to certain currencies, etc. But I hope that you get the picture.

This means that instead of blindly risking 2% per position, you should instead look at how many positions you currently have or intend to open.

Then you should study how correlated those positions would be to one another.

Finally, you can work out how to size your positions so that if all of them were to be stopped out at once it would not be devastating to your portfolio.

For example, the following trade setups were discovered on the 19/06/17:

Ticker	Date/Time	Setup	EntryStop	Initial-StopLoss	ATR StopLoss	Actual StopLoss	InitialPT	R:R	Sector
AAPL	19/06/2017	BTDR	146.83	142.11	143.03	142.11	155.98	1.76	Technology
AMAT	19/06/2017	BTDR	44.43	42.79	42.92	42.79	47.86	1.87	Technology
DLPH	19/06/2017	BTDR	86.67	84.15	84.91	84.15	90.05	1.18	Consumer Cyclicals
EBAY	19/06/2017	BTDR	35.01	33.87	34.20	33.87	36.50	1.15	Technology
HPQ	19/06/2017	BTDR	17.76	17.13	17.36	17.13	18.66	1.28	Technology
HSY	19/06/2017	OSIB	112.71	110.67	110.60	110.60	116.02	1.34	Consumer non-Cyclicals
KLAC	19/06/2017	BTDR	101.51	96.55	98.13	96.55	109.59	1.47	Technology
LRCX	19/06/2017	BTDR	152.09	147.46	146.90	146.90	167.05	2.65	Technology
MCHP	19/06/2017	BTDR	83.11	80.64	80.83	80.64	87.49	1.57	Technology
SWKS	19/06/2017	BTDR	104.65	100.46	101.28	100.46	112.11	1.60	Technology

Note that most of the above setups are produced by a stock belonging to the technology sector and so it is quite clear that many of the above stocks will be highly correlated to one another.

Let's next assume that we have a $10,000 account and want to lose no more than $100 per trade if the stop-loss is executed.

If we were to place orders to buy LRCX, AMAT and KLAC (which not only belong to the same sector, but also to the same industry group) we haven't really bet $100 on 3 separate positions, but instead have made a single $300 bet on the semiconductor industry group.

That's because if one position is stopped out, it is highly likely that all 3 positions will be stopped out.

This leaves us with a few options. We could either select just one of the above stocks to place an order for and keep the amount of risk at stop-loss to $100, or we could place orders for all 3 stocks but lower the risk at stop-loss to $33 per position.

Another approach upon discovering that 8 technology stocks have produced a signal is to simply trade the technology sector ETF (XLK) instead of any of the individual stocks which belong to that sector.

The main point is that just because you might have 5 or more positions, it doesn't necessarily mean that you have a diversified portfolio. This is why when calculating how many shares to buy of an individual stock, you should also analyse how the purchase might impact your entire portfolio.

Market and Sector Type analysis

One of the most often quoted Wall Street axioms is that 40 percent of a stock's price movement is due to the market, 30 percent to the sector, and only 30 percent to the stock itself.

If this is true, it obviously makes sense to analyse the overall market and the sector that a stock belongs to before deciding whether you want to trade it.

The following rules are a good starting point for developing your own market and sector type analysis methods because they allow you to quantify both the direction AND volatility of the market or a particular sector.

Note that for simplicities sake the following criteria are applied to the 9 major sector ETFs and the S&P500. If you wanted to take this analysis further you might also apply the criteria to specific industry groups or alternative ETFs.

Further, the time-frame that you use for your analysis will make a big difference to the conclusions that you draw. For example, analysing the past 200 days might show that the market is bullish but analysing the past 50 days might show that the market is bearish.

With that said, for the following examples we'll assume that we are most interested in swing trades which last between 1 – 4 weeks. To analyse both the market and sector, we'll therefore use the past 3 months of data.

If you are trading shorter-term strategies then you might want to analyse the past 1 month and if you are trading longer-term strategies then you might want to analyse the past 6 - 12 months.

Ideally, you will test the different parameters with your own strategies and find out what works the best.

Market/Sector Direction

We'll begin by quantifying the market/sector direction. To do this we'll use a 63 day ROC% indicator (note that 63 trading days is roughly 3 months).

The direction will be classified as follows:

StrongBull = ROC(C,63) > 7;

Bull = ROC(C,63) > 4 AND ROC(C,63) <= 7;

Sideways = ROC(C,63) <= 4 AND ROC(C,63) > -2;

Bear = ROC(C,63) <= -2 AND ROC(C,63) >= -5;

StrongBear = ROC(C,63) <= -5;

Market/Sector Volatility

To quantify the volatility of a market we'll use the ATR% indicator. To calculate the ATR% indicator you simply need to divide today's 21 day ATR by today's closing price.

We'll then calculate the ATR% mean and standard deviation using the past 2 years of data.

The volatility will then be classified as follows:

VeryVolatile = ATR% >= (ATR%Mean + (3*ATR%SD))

Volatile = ATR% >= (ATR%Mean + (1*ATR%SD))

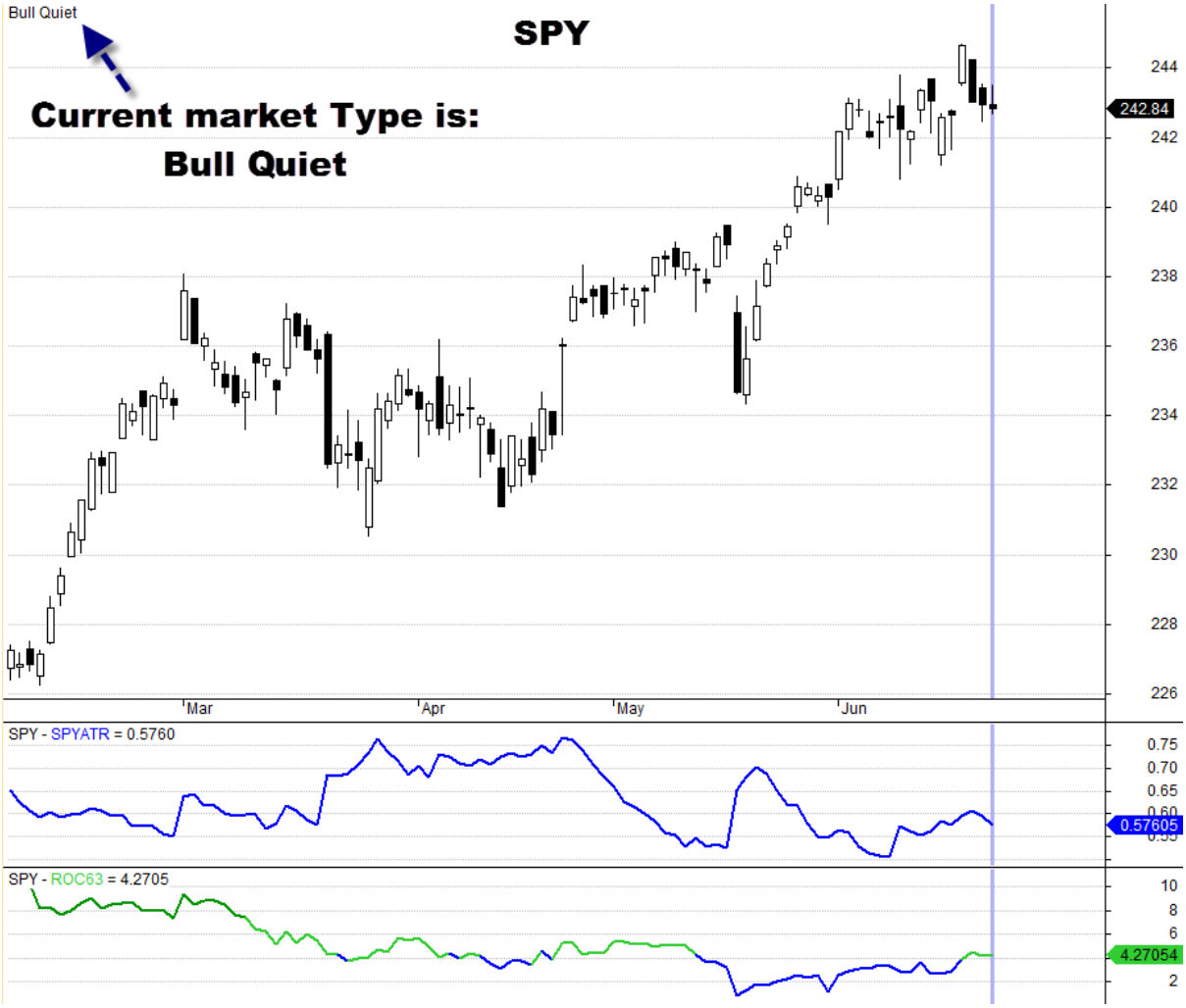
Normal = ATR% < (ATR%Mean + (1*ATR%SD)) AND ATR% > (ATR%Mean - (1*ATR%SD))

Quiet = ATR% <= (ATR%Mean - (1*ATR%SD))

Charting the Market Type

The above criteria allow you to quantify 20 different types of market. Again, with any good charting software you should have no problem programming your charts to automatically tell you what type of market that you are currently operating in.

For example, the following chart was created with Amibroker and in the top-left of the screen you can see the current market type. For other confirmation we can also see both the 63 day ROC% and ATR% indicator plotted beneath the price series.



The next table is created by scanning a watch-list of the 9 major sector ETFs. Note that although the broader S&P500 Index is currently Bull Quiet, not all sectors are the same.

Ticker	Date/Time	Sector	MarketType
SPY	22/06/2017	SPDR S&P 500 Trust ETF	Bull Quiet
XLB	22/06/2017	Materials Select Sector SPDR ETF	Sideways Normal
XLF	22/06/2017	Financial Select Sector SPDR ETF	Sideways Normal
XLE	22/06/2017	Energy Select Sector SPDR ETF	StrongBear Normal
XLI	22/06/2017	Industrial Select Sector SPDR ETF	Bull Quiet
XLK	22/06/2017	Technology Select Sector SPDR ETF	Bull Normal
XLP	22/06/2017	Consumer Staples Select Sector SPDR ETF	Sideways Normal
XLU	22/06/2017	Utilities Select Sector SPDR ETF	Sideways Quiet
XLY	22/06/2017	Consumer Discretionary Select Sector SPDR ETF	Bull Normal
XLV	22/06/2017	Health Care Select Sector SPDR ETF	StrongBull Normal

This is useful information because it allows us to use strategies that fit the type of sector that we're operating in.

For example, we'll have more success if we avoid any long signals from the energy sector because it is currently strong bear.

We might favour short-term mean-reversion signals in the Financials, Materials, Utilities and Consumer staples sectors because those sectors are currently sideways.

And we might prefer to identify shallow pullback swing trading setups in the stocks that belong to the remaining sectors because they are bullish.

Note that the market and sector type can also be used to modify exit signals.

For example, if you are long a stock that belongs to a sector which is sideways then you should take quicker profits at areas of price resistance.

If on the other hand you are long a stock which belongs to a sector which is very bullish you can have more confidence using a trailing stop-loss and trying to catch a longer trend for a greater profit.

For example, on the 18th May 2017 a number of swing trading setups were identified and can be seen in the table below:

Ticker	Date/Time	Setup	EntryStop	Initial-StopLoss	ATR StopLoss	Actual StopLoss	InitialPT	R...	Sector
BA	18/05/2017	NHGD	178.57	175.40	175.66	175.40	185.78	2.07	Industrials
HPQ	18/05/2017	NHGD	18.75	18.50	18.43	18.43	19.34	1.61	Technology
SWK	18/05/2017	OSIB	134.99	132.65	132.80	132.65	139.04	1.52	Industrials
WDC	18/05/2017	OSIB	86.09	83.62	83.88	83.62	90.25	1.49	Technology
RSG	18/05/2017	OSIB	61.71	60.69	60.85	60.69	63.41	1.48	Industrials
DRI	18/05/2017	BTDR	86.66	85.12	85.21	85.12	89.14	1.39	Consumer Cyclicals
ANTM	18/05/2017	OSIB	177.97	174.47	174.19	174.19	183.15	1.14	Healthcare
BSX	18/05/2017	OSIB	26.23	25.87	25.83	25.83	26.76	1.08	Healthcare
RCL	18/05/2017	OSIB	105.55	103.03	103.30	103.03	108.69	1.04	Consumer Cyclicals
GLW	18/05/2017	OSIB	28.79	28.17	28.21	28.17	29.56	1.04	Technology

The next table also shows us the market and sector type during the above date.

Ticker	Date/Time	Sector	MarketType
SPY	18/05/2017	SPDR S&P 500 Trust ETF	Sideways Normal
XLB	18/05/2017	Materials Select Sector SPDR ETF	Sideways Normal
XLE	18/05/2017	Energy Select Sector SPDR ETF	StrongBear Normal
XLF	18/05/2017	Financial Select Sector SPDR ETF	StrongBear Normal
XLI	18/05/2017	Industrial Select Sector SPDR ETF	Sideways Normal
XLK	18/05/2017	Technology Select Sector SPDR ETF	Bull Normal
XLP	18/05/2017	Consumer Staples Select Sector SPDR ETF	Sideways Quiet
XLU	18/05/2017	Utilities Select Sector SPDR ETF	Bull Quiet
XLV	18/05/2017	Health Care Select Sector SPDR ETF	Sideways Quiet
XLY	18/05/2017	Consumer Discretionary Select Sector SPDR ETF	Sideways Normal

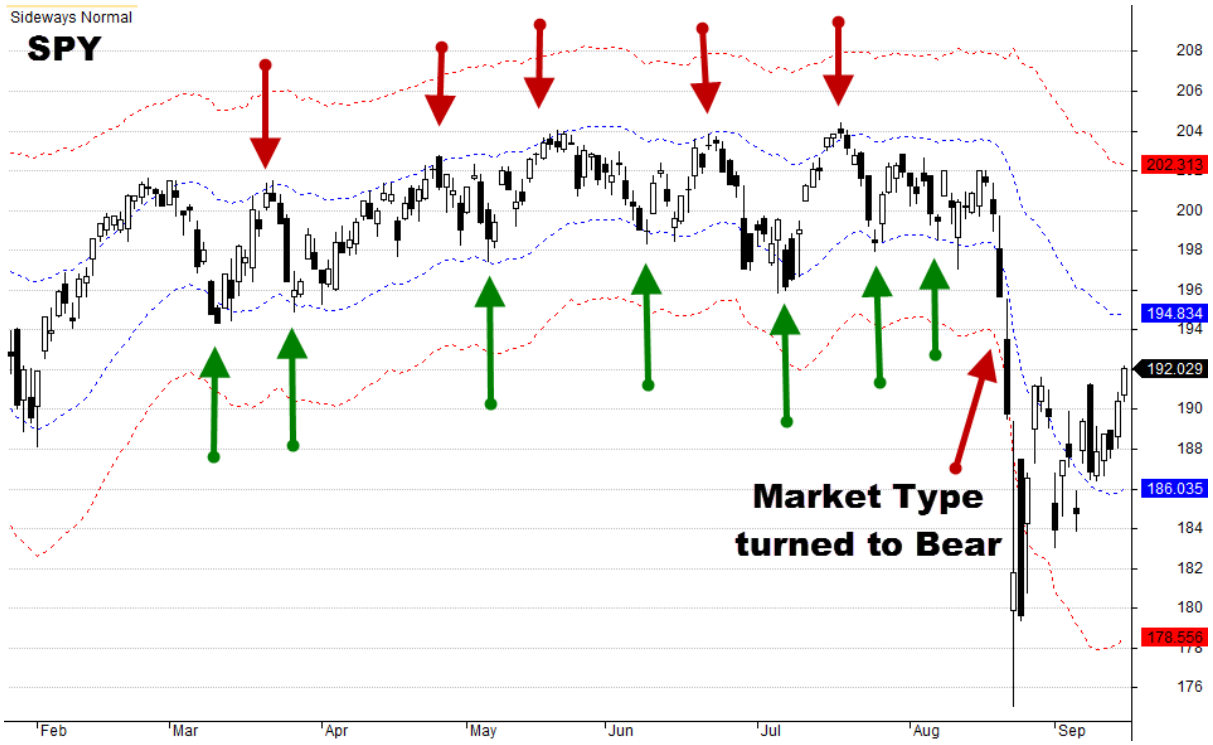
Note that the SPY (which represents the broader market) is sideways normal. The first thing that we'd therefore want to do is check the SPY chart and check that the price isn't already trading towards the top of a range.

Remember, when trading a sideways market it is preferable to buy pullbacks towards the bottom of a range and to avoid buying pullbacks if the overall sector/market is trading towards the top of a range.

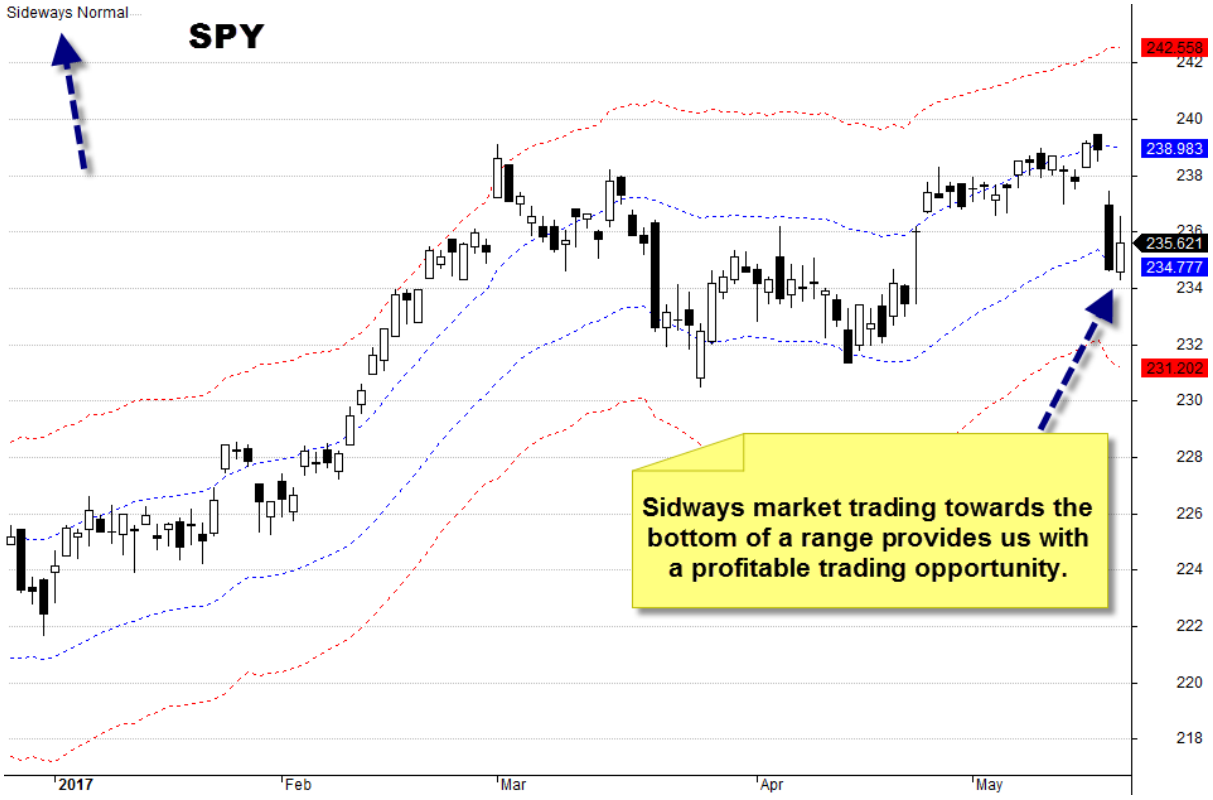
To quantify the top and bottom end of a range we could use a variety of different technical indicators, but for the following examples we'll simply use an upper and lower Keltner channel.

The following example shows the SPY between February and August 2015. Note that for the majority of this period the market type was sideways and it can be seen that buying towards

the lower blue Keltner channel was preferable to buying towards the upper blue Keltner channel:



Coming back to the present period, we can see that the SPY is again a sideways market type and is also trading towards the lower blue Keltner band.



This analysis of the SPY would encourage us to enter a long position.

Finally, the volatility of the market is normal. This is useful information because being able to gauge the volatility of a market or sector allows you to better decide upon the specific types of entry and exit signals that you want to use.

I.E. If the market or sector is sideways normal then an edge is to buy oversold pullbacks close to the lower blue Keltner band or an area of previous price support.

If the market or sector is volatile then you might want to tighten stops and take profits sooner.

If the market or sector is sideways quiet then you might prefer to sit out altogether and wait for a breakout.

If the market or sector is StrongBear VeryVolatile then you might be on the look-out for a more meaningful reversal. And so on.

For example, the past 3 major market corrections have bottomed out soon after the market type became StrongBear VeryVolatile:

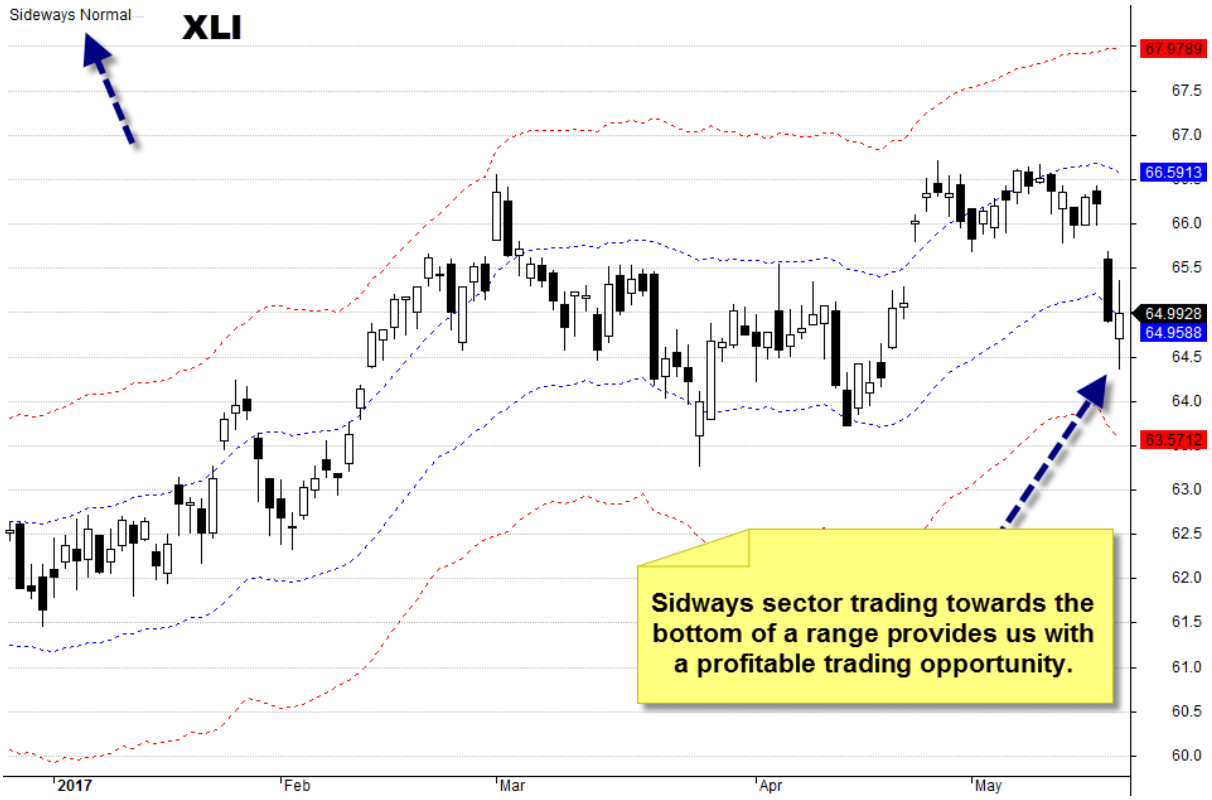
The point is that there isn't a single strategy that works in all different types and so it is important to understand what type of market you're trading in before putting your capital at risk.

Looking back at the swing trading setups produced on the 18th May 2017, we can see that the 3 setups with the most favourable risk to reward ratios were produced by BA, HPQ and SWK.

BA and SWK belong to the Industrials sector and HPQ belongs to the technology sector.

Analysing the sectors we see that the Industrials are sideways normal and technology is bull normal.

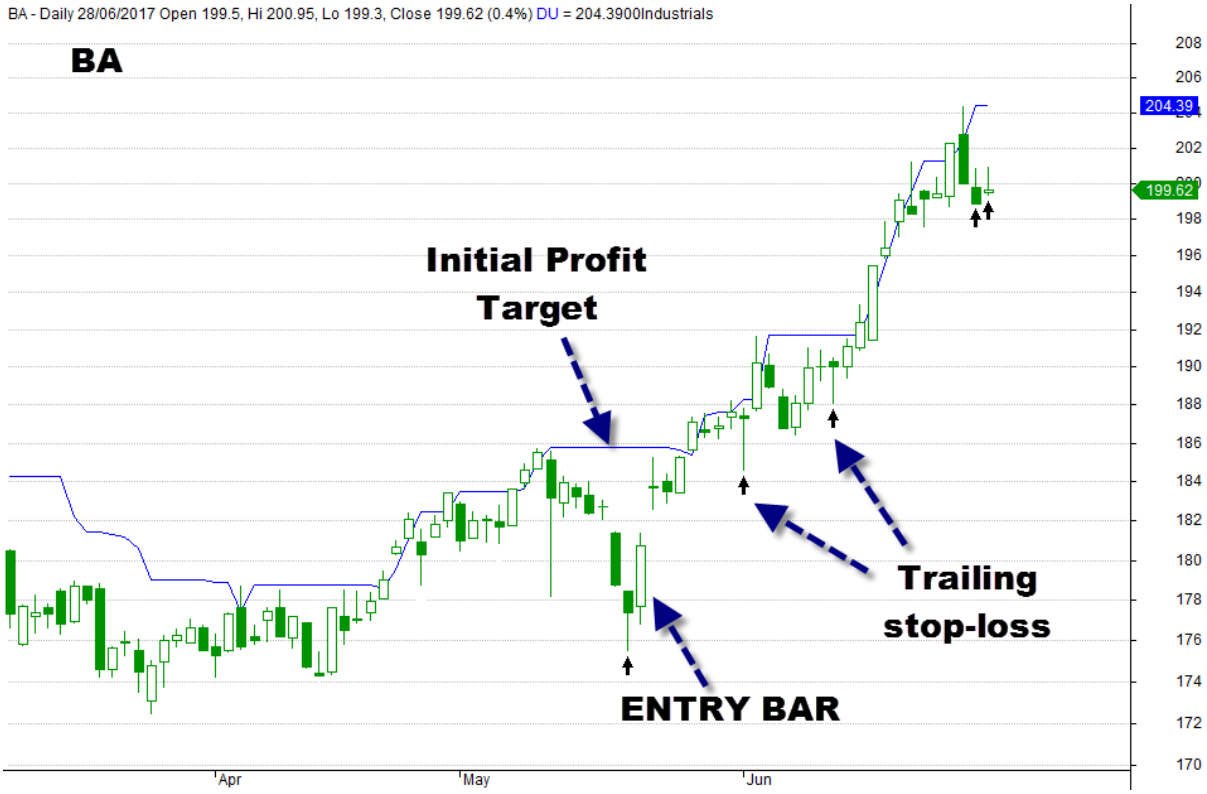
Because the Industrials sector is sideways we can again analyse the chart to make sure that the sector is trading towards the bottom and not the top of a range:



The above chart shows us that XLI is trading towards the bottom of a range so we can have confidence placing an order to buy a stock from that sector.

Because the BA setup has a better risk to reward ratio than SWK setup we would place a buy-stop order for BA at $178.57.

The following chart shows us what happened after the 18th May 2017:



Note that once the position was initiated the trader could have either exited at the initial profit target or using a trailing stop-loss.

To help guide the exit decision the trader could have monitored both the market and sector throughout the duration of the trade. As long as the market/sector did not become volatile or bearish, a trailing stop-loss could have been used to good effect.

Market and Sector Type Tests

To better illustrate why it's important to consider the market/sector type before placing an order I carried out a couple of CNLDD strategy tests.

The table below presents the average per trade performance metrics of the CNLDD strategy during different market types.

Note that I tested the strategy once whereby the trader placed market on open orders to be executed on the day following the signal (MOO).

And then I tested the strategy once whereby the trader placed limit orders 0.25*ATR below the low of the signal bar (LIMIT). This limit order was good for one day only.

Here are the results:

Market Type	# Trades	Avg. P/L %	Avg Bars Held	% of Winners	Profit Factor
CNLDD MOO STRATEGY					
Not Analysed	6443	0.56%	8	62.98	1.36
Strongbull AND Volatile;	23	1.74%	7	86.96	5.17
Strongbull AND Normal;	1291	0.98%	8	63.98	1.73
Strongbull AND Quiet;	488	0.57%	8	64.14	1.47
Bull AND Volatile;	51	1.39%	8	76.47	2.33
Bull AND Normal;	1338	1.09%	8	68.31	1.95
Bull AND Quiet;	428	-0.07%	8	58.64	0.95
Sideways AND Volatile;	288	0.59%	8	65.63	1.34
Sideways AND Normal;	1989	0.40%	8	61.49	1.27
Sideways AND Quiet;	225	0.46%	8	58.22	1.37
Bear AND Volatile;	177	1.22%	7	71.19	1.88
Bear AND Normal;	207	-0.04%	8	63.77	0.98
Bear AND Quiet;	NA	NA	NA	NA	NA
Strongbear AND Volatile;	275	-0.65%	9	54.55	0.8
Strongbear AND Normal;	301	0.00%	8	54.15	1
Strongbear AND Quiet;	NA	NA	NA	NA	NA
CNLDD LIMIT STRATEGY					
Not Analysed	2775	0.69%	8	61.8	1.43
Strongbull AND Volatile;	14	1.95%	7	85.71	8.53
Strongbull AND Normal;	501	1.03%	9	63.07	1.8
Strongbull AND Quiet;	197	0.91%	9	69.04	1.81
Bull AND Volatile;	22	1.89%	9	72.73	2.72
Bull AND Normal;	551	1.56%	8	68.97	2.53
Bull AND Quiet;	174	-0.17%	9	55.17	0.89
Sideways AND Volatile;	124	-0.32%	9	59.68	0.86
Sideways AND Normal;	804	0.65%	9	59.7	1.44
Sideways AND Quiet;	82	0.49%	9	53.66	1.45
Bear AND Volatile;	89	1.69%	8	66.29	2.05
Bear AND Normal;	91	-1.05%	8	54.95	0.68
Bear AND Quiet;	NA	NA	NA	NA	NA
Strongbear AND Volatile;	145	0.42%	9	60.69	1.15
Strongbear AND Normal;	170	0.18%	9	55.29	1.07
Strongbear AND Quiet;	NA	NA	NA	NA	NA

To make the analysis of the above table easier I have color-coded the profit factor column to be green if the value is above the median value and red if the value is below the median value.

When analysing the above results it is immediately clear that the current market type can have a significant impact upon the performance of a strategy.

For example, the above results suggest that we should only bear markets using the CNLDD strategy if the market is also volatile.

Unsurprisingly, the best market type to trade the strategy in is a normal or volatile bull or strong bull market.

With regards to the sideways market results, the above tests did not also stipulate that if the market was sideways then the SPY must be trading towards the lower blue Keltner band.

If we do include a filter which says that we can only trade during a sideways market if the SPY has recently closed beneath the lower blue Keltner band, we find that the performance of the strategy can be improved.

For example, the win-rate and profit factor of the CNLDD MOO strategy has increased from 61.49% to 65.36% and 1.27 to 1.64 respectively.

The win-rate and profit factor of the CNLDD LIMIT strategy has increased from 59.7% to 65.19% and 1.44 to 2.04 respectively.

The main takeaway from these results is that context plays a large part in how successful a particular setup can be, and so analysing more than just the stock that you're about to trade is a proven method for improving your results.

Part 5 – Putting It All Together

In this part of the guide you will learn how to scan for the signals and analyse the sector and market strength using tools that are freely available online. Please note that I understand some of you might already know how to do this already, if so…please skip this chapter.

But I also know that many of you have very little or no programming experience and the thought of writing a script to scan for signals is daunting to say the least. This chapter is for you.

Also please note that if you're a member of the Flagship trading course I invite you to get in touch with me if you need more specific programming help.

Scanning for Patterns with ProRealTime

There are numerous tools available online which allow you to scan for technical chart signals, but one of the better free charting software packages that I have used is ProRealTime.

(Please note that I have no affiliation with ProRealTime and that any mistakes I make with regards to the use of their software are my own and have nothing to do with ProRealTime)

For the following example I will walk you step by step thorough the process of creating an indicator and identifying stocks that have produced a 3 CNLDD signal using the free ProScreener tool from ProRealTime.

I will also show you how to identify whether or not the stocks belongs to an oversold sector, and how to identify whether or not the broader market is in an up-trend.

Step 1 – Create your PRT account

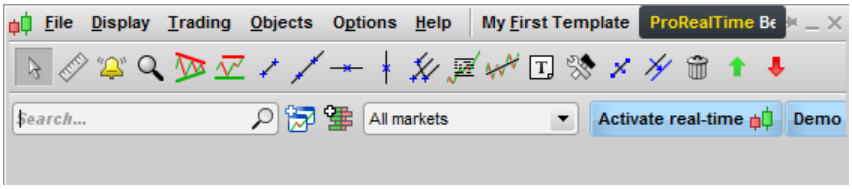
Visit www.ProRealTime.com and create a free EOD account.

Step 2 – Launch Your Platform

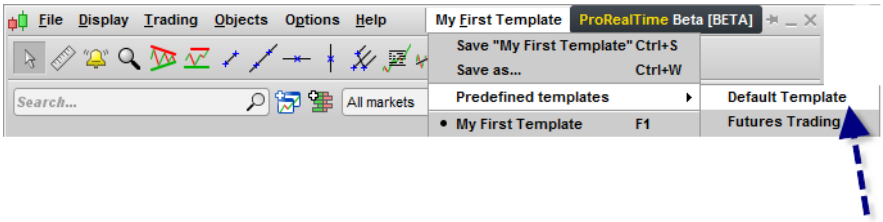
Once you successfully created your account, login and launch the Platform:

Step 3 – Create a Chart Template

In the top left hand corner of your screen you should see the PRT menu:



- Click “My First Template”.
- Scroll down to “Predefined templates” and click “Default Template”.

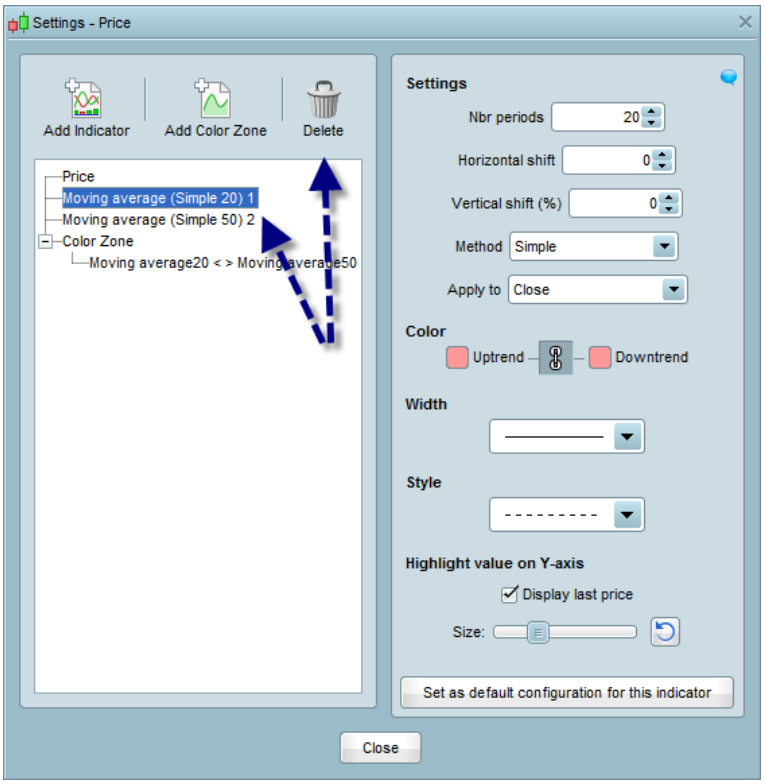


You should now see the following screen:

We’ll simplify the default template by removing the existing chart indicators:

- Click the spanner icon found at the top left of your charts:

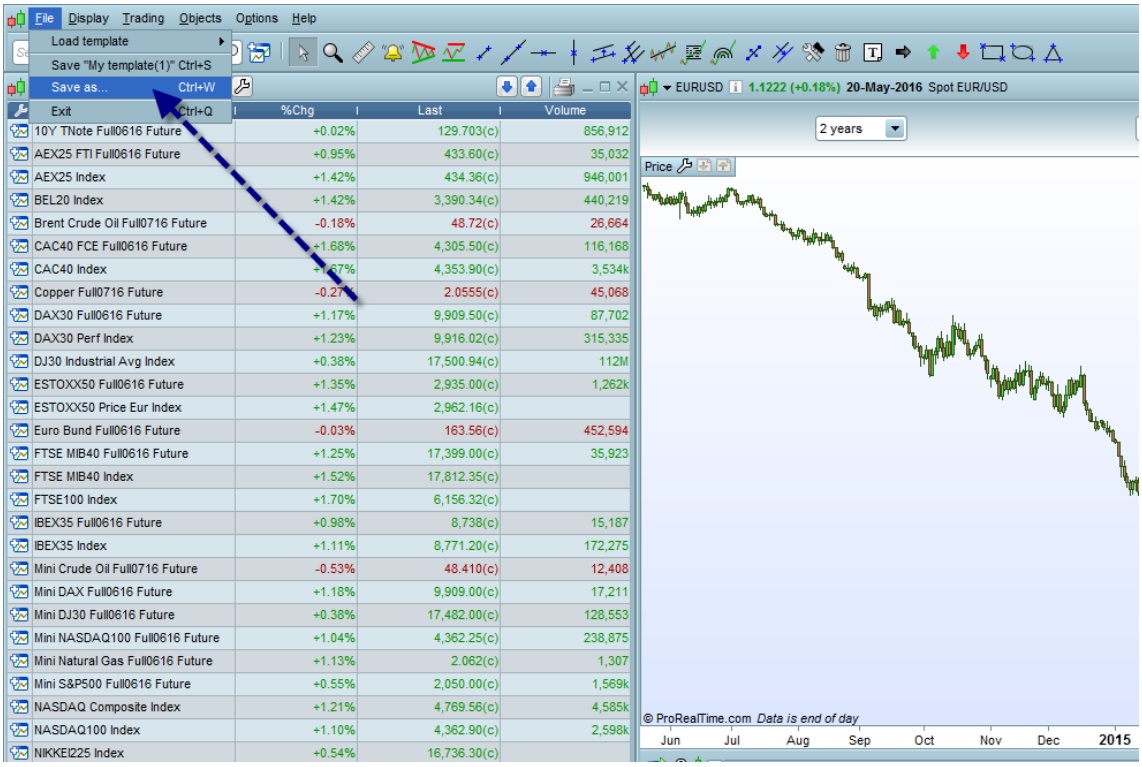
- Click on each of the indicators and once they are highlighted click the Delete icon to delete the indicators from your charts:



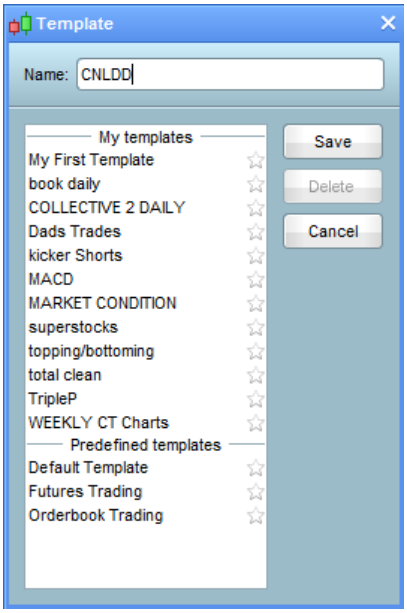
- Repeat the same steps for the bottom chart.
- Remove the indicators from your charts by clicking the Cross icon.

Your screen should now look like this:

Before we go any further, save your chart template by clicking “File”, then “Save as…”



This is going to become our CNLDD chart template so name the template accordingly and click “Save”.



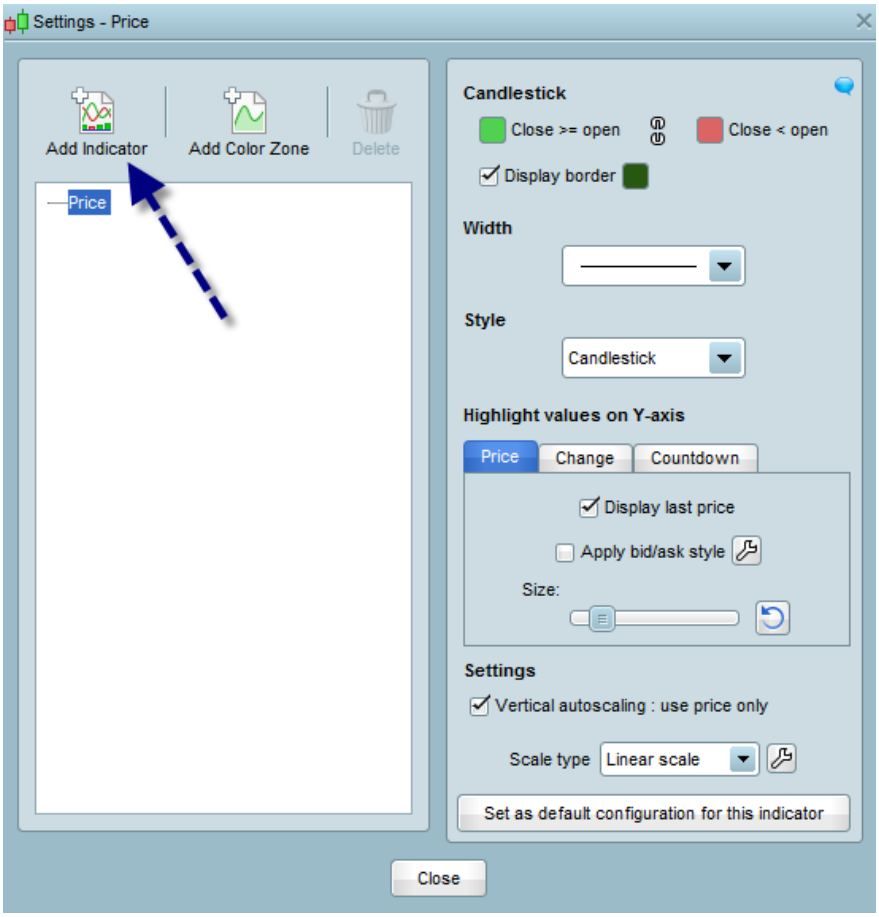
The CNLDD strategy has a couple of different parameters. Once you’ve learnt how to create the scanner, you won’t actually need to see the indicator values on your charts because you’ll know that any of the stocks found by the scanner will have met your rules.

However, for the purposes of this tutorial we’ll include the indicators on our charts:

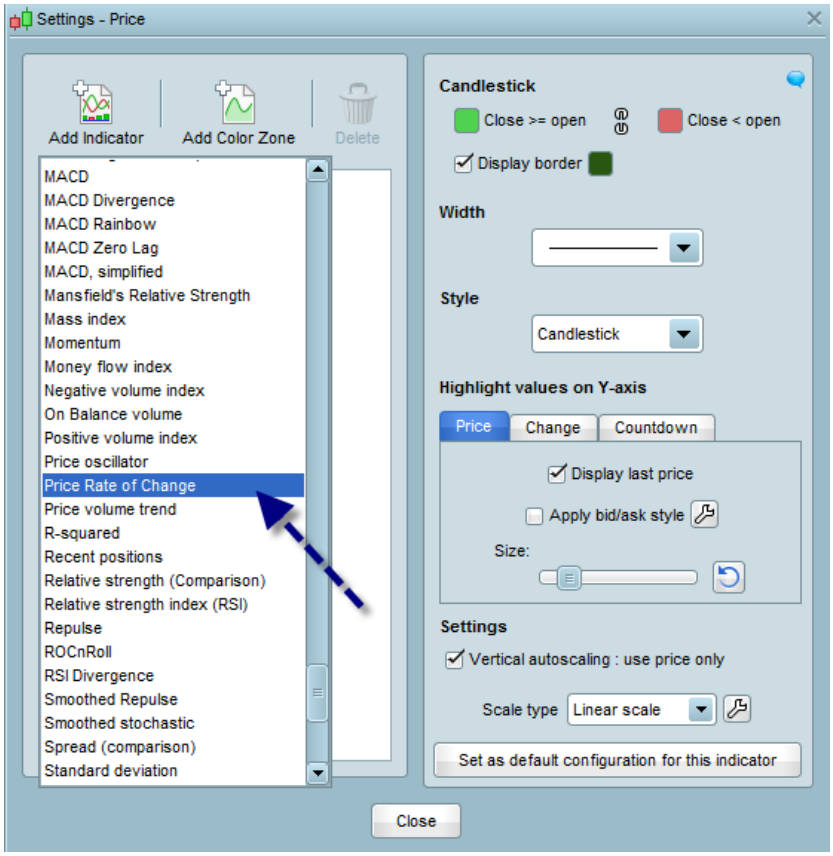
The first indicator is the 100 day ROC%. To add the 100 day ROC% to your chart, follow these steps:

- Click the spanner icon.

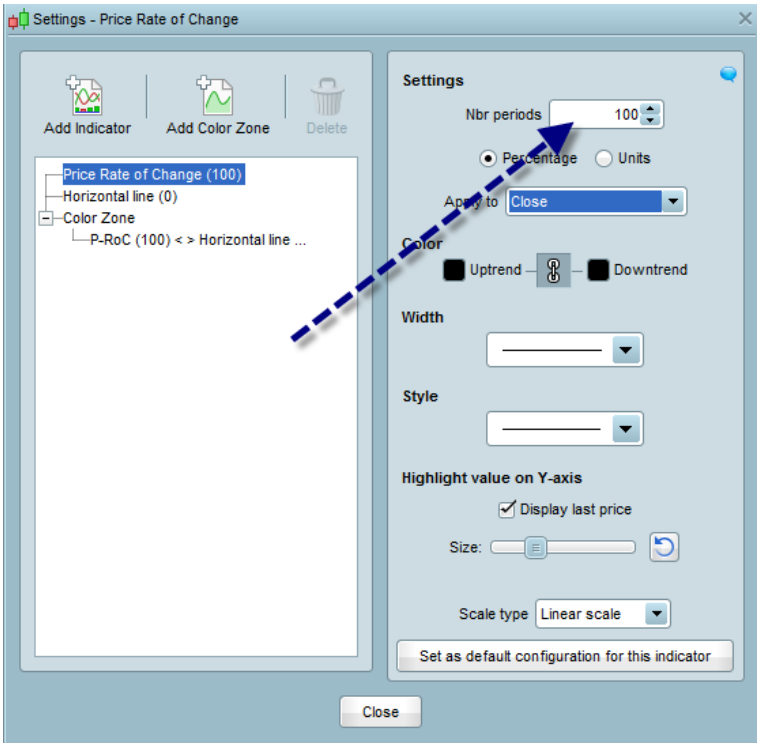
- Click the add indicator button.



- Scroll down to “Price Rate of Change” and click.



- Change “Nbr periods” to 100.



- Click “Close” and then resize your indicator by clicking and dragging the border of the indicator pane.

Follow the same steps for the bottom chart because later on we'll us this chart to analyse the 100 Day ROC % of the sector and market.

Your screen should now look like this:

Save your chart template again. (Tip: Hold down "CTRL+W" to do this quickly)

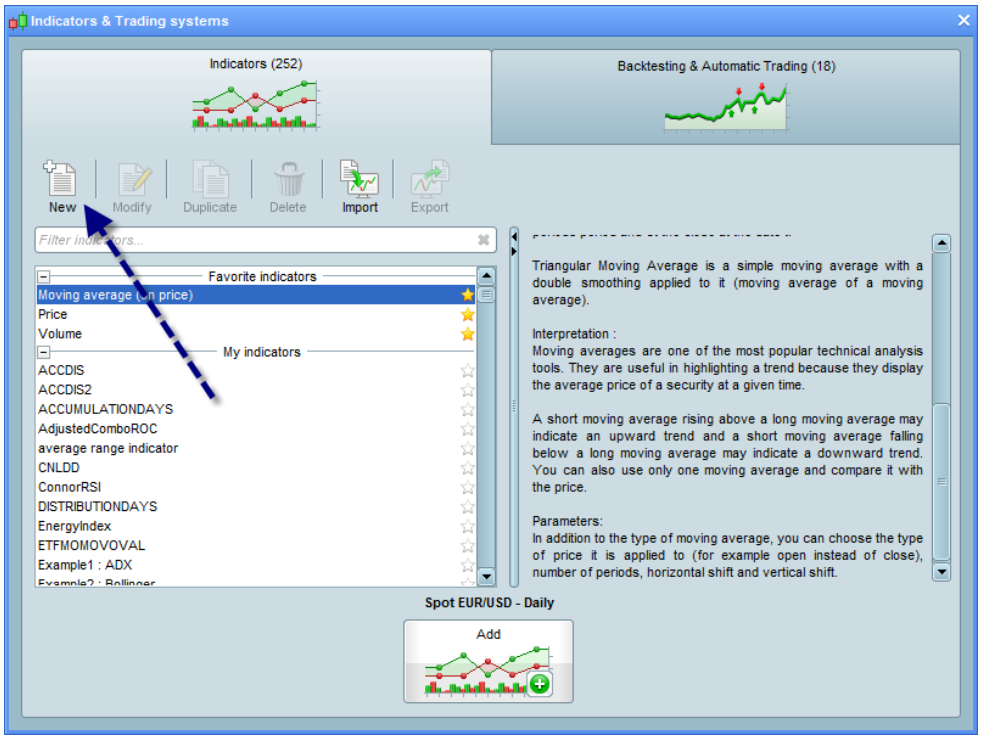
Step 4 – Creating a Custom CNLDD Indicator

The next thing to do is create an indicator which tells us if there have been 3 CNLDD.

To create the CNLDD indicator, please follow the steps below…

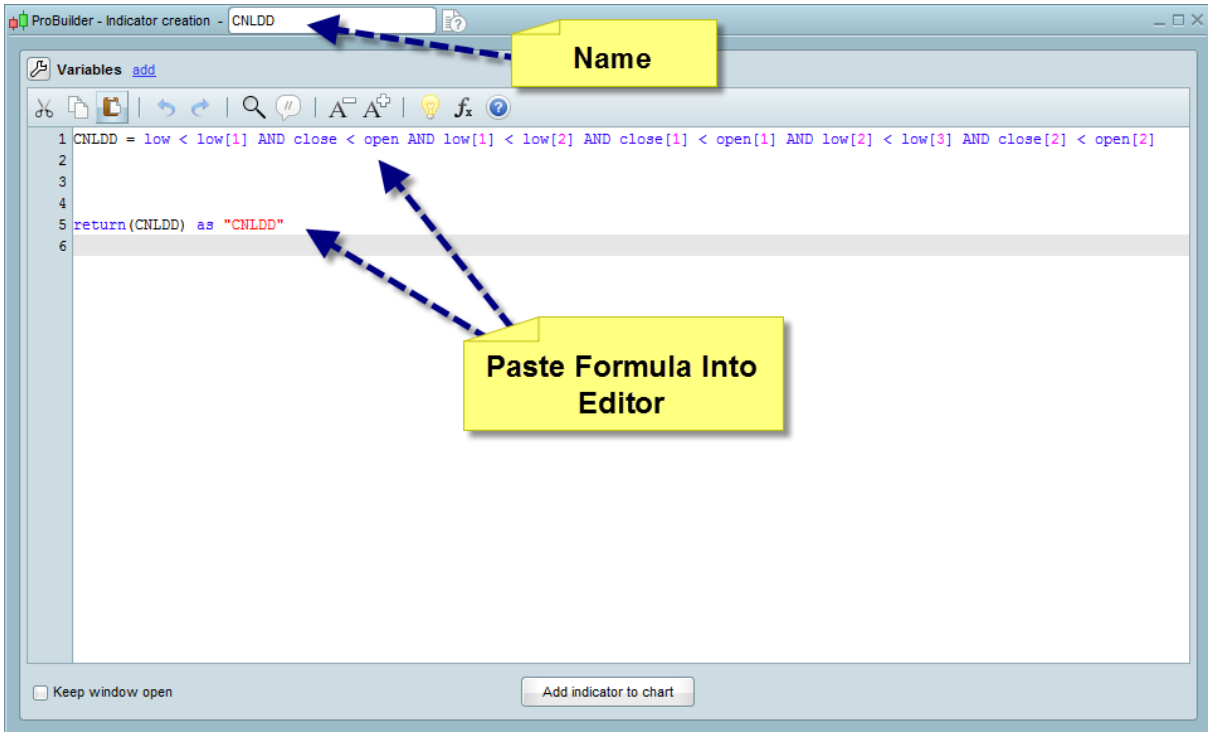
- Click the Add Indicator button:

- Click “New”.



- Name the Indicator CNLDD and then copy and paste the following code into the formula editor (making sure that each line is on a single line):

```
CNLDD = low < low[1] AND close < open AND low[1] < low[2] AND close[1] < open[1] AND low[2] < low[3] AND close[2] < open[2]

Return(CNLDD) as "CNLDD"
```



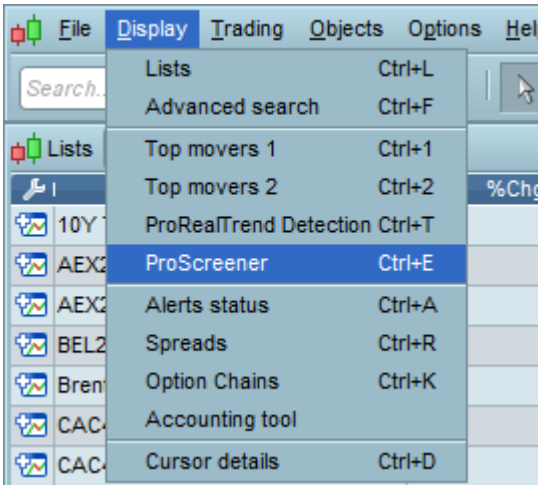
- Click "Add indicator to chart" and your CNLDD indicator will be beneath your price chart. Whenever there are 3 CNLDD, the CNLDD indicator will have a value of **1**.

- Press CTRL + W and select CNLDD to save your Chart template.

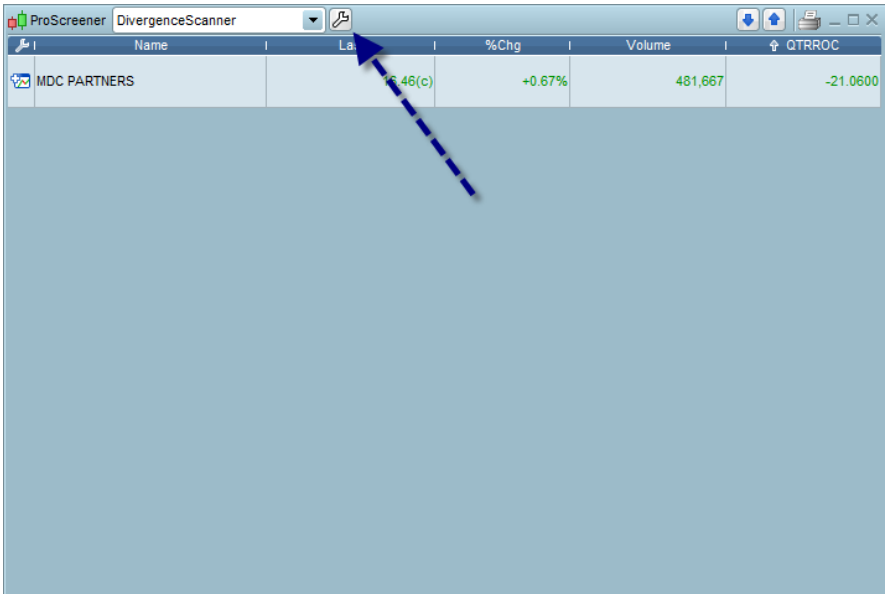
Step 5 – Creating a CNLDD Signal Screener

We're now going to create a screener which will search the database of stocks for any signals that meet our rules.

- In the top left hand corner, click "Display", and then click "ProScreener".

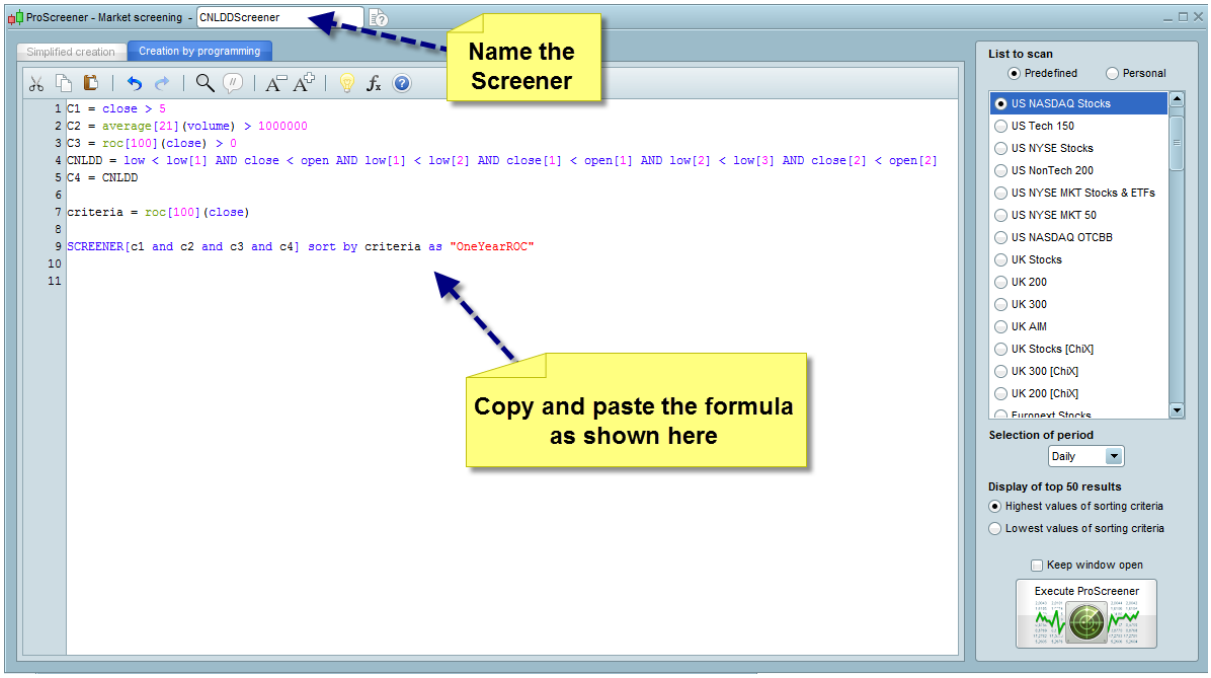


- Click the Spanner icon:

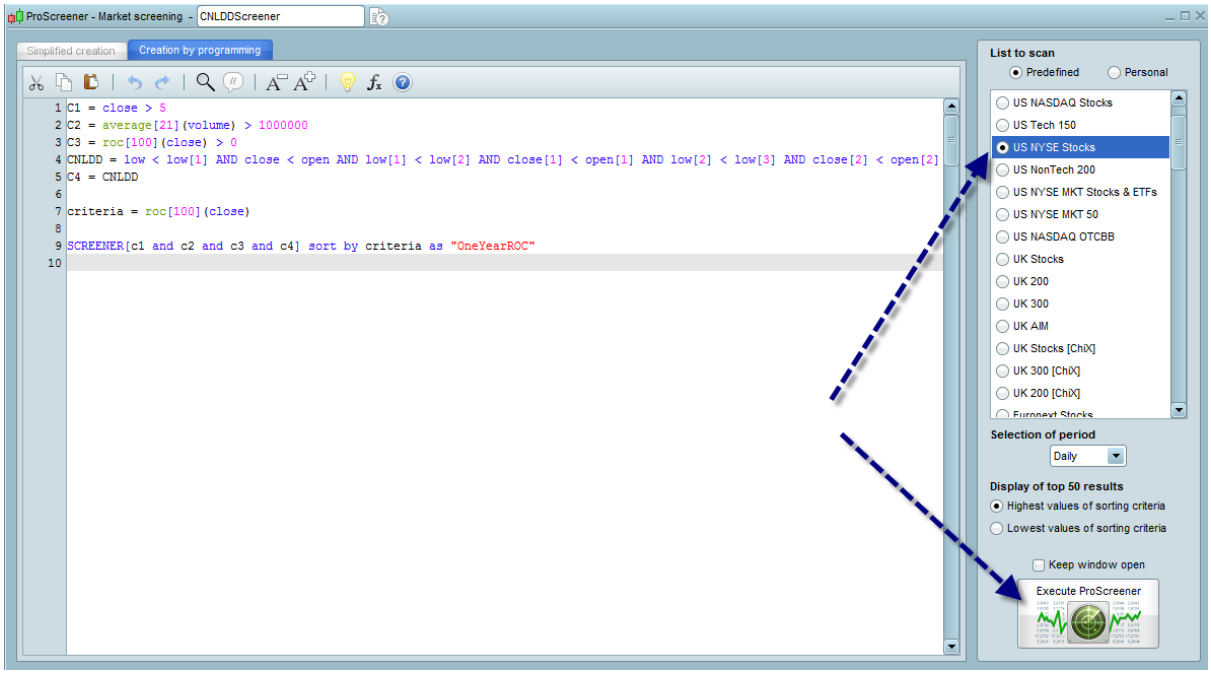


- Click “New”.
- Click the “Creation by programming” button.
- Then give the screener a name and copy and paste the following code into the editor:

```
C1 = close > 5

C2 = average[21](volume) > 1000000

C3 = roc[100](close) > 0

CNLDD = low < low[1] AND close < open AND low[1] < low[2] AND close[1] < open[1] AND low[2] < low[3] AND close[2] < open[2]

C4 = CNLDD

Criteria = roc[100](close)

SCREENER[c1 and c2 and c3 and c4] sort by Criteria as "OneYearROC"
```

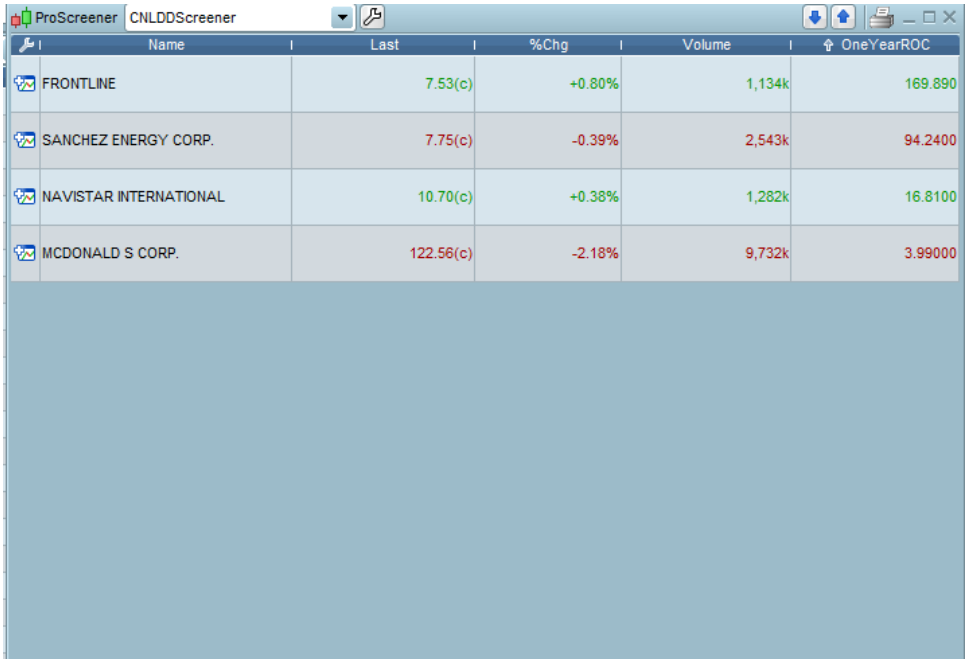


- On the right hand side of the formula editor, select the list of stocks that you want to scan. For this example we'll choose the "US NYSE Stocks" list.
- Then Click "Execute ProScreener".



You'll now have a list of stocks that are $5.00 or more, have an average daily volume greater than 1,000,000 shares traded, have produced 3 CNLDD and have a 100 day ROC% > Zero.

I'm doing this on Sunday 23/05/2016 and my screener has found 4 stocks:



You can click any of the stocks from your list to look at their chart.

For example, if I click McDonalds, we see that the CNLDD indicator has a value of 1 and the ROC indicator is above zero:

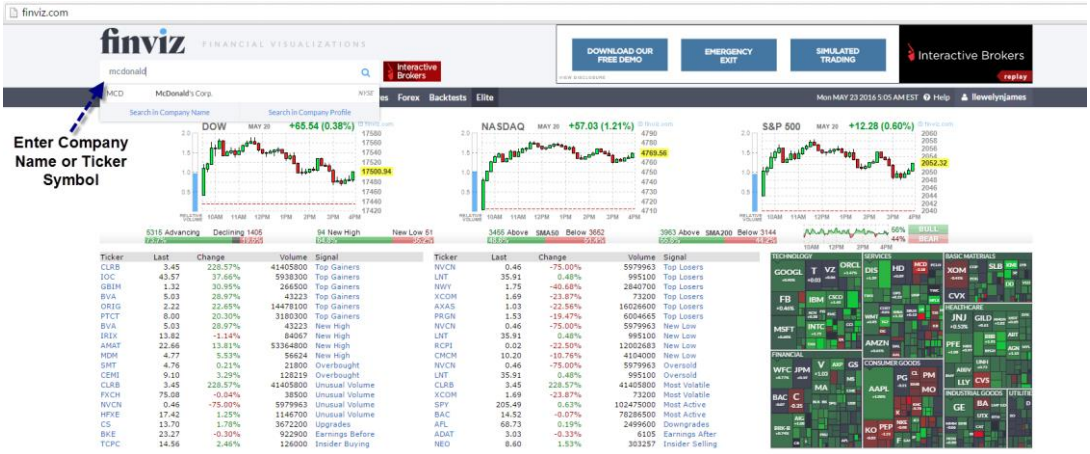
Step 6 – Checking the Sector and Market Strength/Weakness

The data which I have presented in this book illustrates that stocks which belong to oversold sectors tend to produce more favourable results when using these strategies.

Furthermore, the signals have historically been more profitable if traded when the broader markets are short-term oversold or in a long-term uptrend.

If you want to find out if the broader market is weak or strong or whether the stocks found by your screener belong to an oversold sector, please follow these steps:

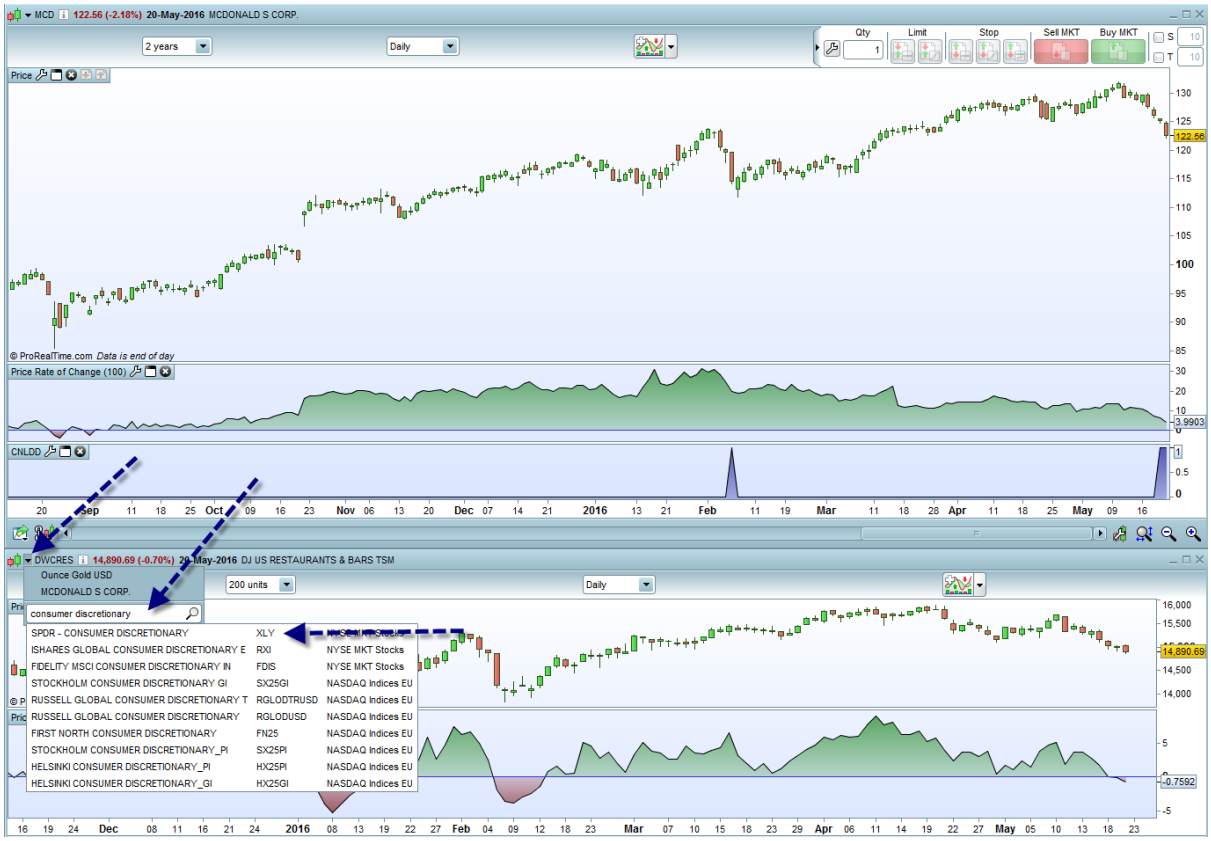
- Run your CNLDD screener and identify the stocks which have produced a signal.
- Click the following link www.finviz.com
- In the search bar, enter the name of your stock and click the link.



You can identify the sector which your stock belongs to by looking beneath the chart:

Index	DJIA S&P500	P/E	23.60	EPS (ttm)	5.19	Insider Own	0.05%	Shs Outstand	897.41M	Perf Week	-4.87%
Market Cap	109.99B	Forward P/E	19.80	EPS next Y	6.19	Insider Trans	-22.37%	Shs Float	877.42M	Perf Month	-2.57%
Income	4.82B	PEG	2.23	EPS next Q	1.40	Inst Own	71.90%	Short Float	1.17%	Perf Quarter	4.94%
Sales	25.36B	P/S	4.34	EPS this Y	-0.60%	Inst Trans	-2.79%	Short Ratio	1.78	Perf Half Y	10.60%
Book/sh	4.35	P/B	28.17	EPS next Y	11.53%	ROA	13.80%	Target Price	132.14	Perf Year	27.56%
Cash/sh	-	P/C	-	EPS next 5Y	10.57%	ROE	64.60%	52W Range	85.41 - 131.96	Perf YTD	4.53%
Dividend	3.56	P/FCF	70.92	EPS past 5Y	0.90%	ROI	-	52W High	-7.12%	Beta	0.51
Dividend %	2.90%	Quick Ratio	1.70	Sales past 5Y	1.10%	Gross Margin	39.00%	52W Low	43.49%	ATR	1.84
Employees	420000	Current Ratio	1.80	Sales Q/Q	-0.90%	Oper. Margin	29.70%	RSI (14)	33.31	Volatility	1.57% 1.41%
Optionable	Yes	Debt/Eq	0.00	EPS Q/Q	46.10%	Profit Margin	19.00%	Rel Volume	1.71	Prev Close	125.29
Shortable	Yes	LT Debt/Eq	6.05	Earnings	Apr 22 BMO	Payout	66.60%	Avg Volume	5.74M	Price	122.56
Recom	2.40	SMA20	-4.57%	SMA50	-3.28%	SMA200	8.32%	Volume	9,731,700	Change	-2.18%

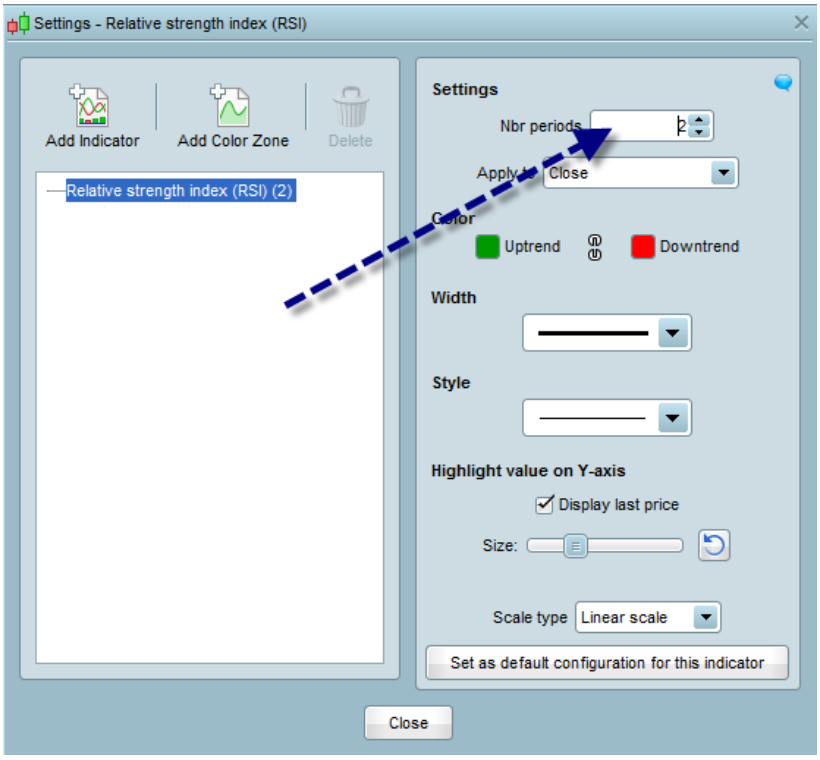
- Services such as restaurants belong to the “Consumer Discretionary” sector.
- Come back to your ProRealTime Charts.
- Click the drop-down button of your second chart, type in the name of the sector that your stock belongs to, and then select the Sector ETF.



To help guide you, please see the following list of major sectors and their corresponding ETF ticker symbols:

SECTOR	ETF TICKER
ENERGY	XLE
MATERIALS	XLB
INDUSTRIALS	XLI
CONSUMER DISCRETIONARY	XLY
CONSUMER STAPLES	XLP
HEALTHCARE	XLV
FINANCIALS	XLF
INFORMATION TECHNOLOGY	VGT
TELECOMMUNICATIONS	IYZ
UTILITIES	XLU

- Add a 2 period RSI indicator to your second chart by clicking the spanner icon.
- Then clicking the “Add indicator” button.
- Then scroll down to the “Relative Strength Index (RSI)” indicator and click it once.
- Change the “Nbr periods” to 2 and then click the “Close” button.



Your second chart will now have a 2-Period RSI indicator plotted beneath the price series.

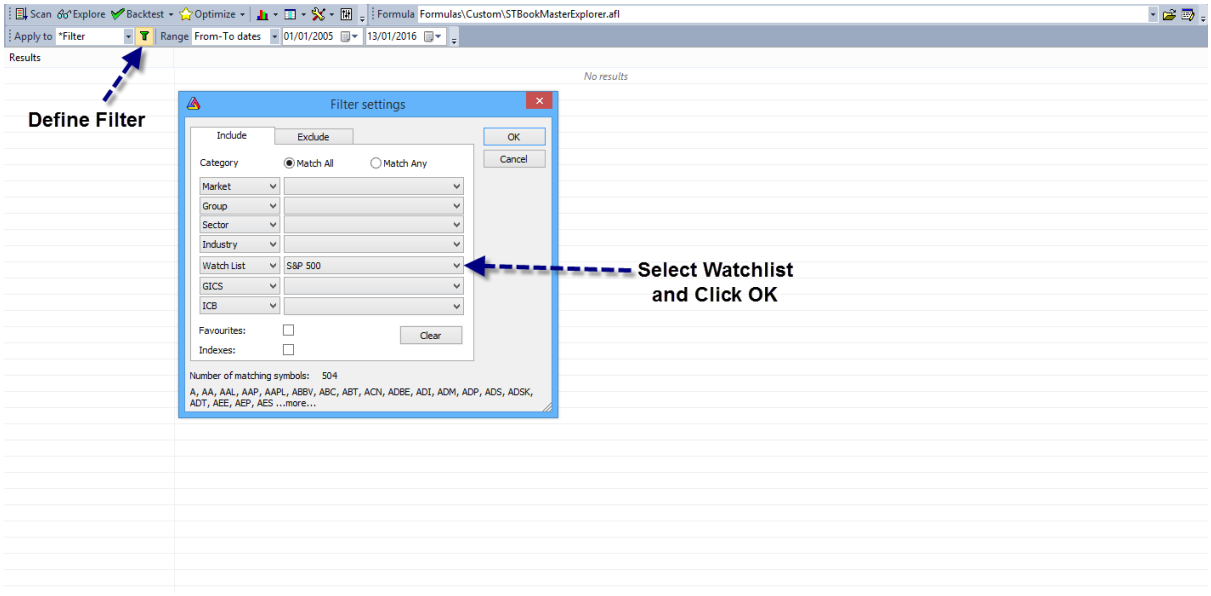
- Save your template by clicking CTRL + W.
- As you can see from this example, the consumer discretionary sector is not oversold so you might not want to trade $MCD.

- Repeat the process for the other stocks which have been found by your screener.
- To check the strength of the broader market, click the drop-down button of your second chart, type “S&P500” in the search-bar and then select the “SPY” ETF.
- If the 100 day ROC% of the SPY isn’t greater than zero or isn’t oversold according to the RSI, you might also want to avoid placing any orders.

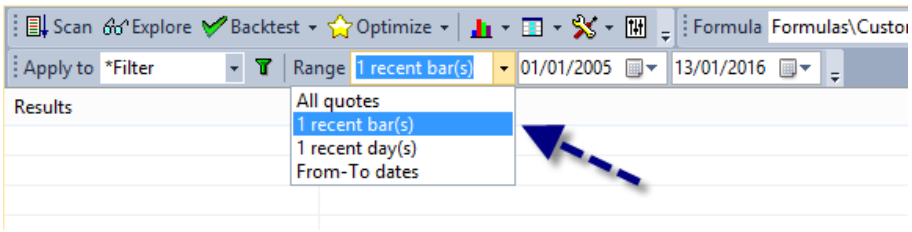
Scanning for Patterns with Amibroker

- To scan for the signals using Amibroker, open a new analysis window by clicking the Plus Sign above your charts and selecting “New Analysis”:

- Click the “Define Filter” tab and select the watch-list of stocks that you want to scan:



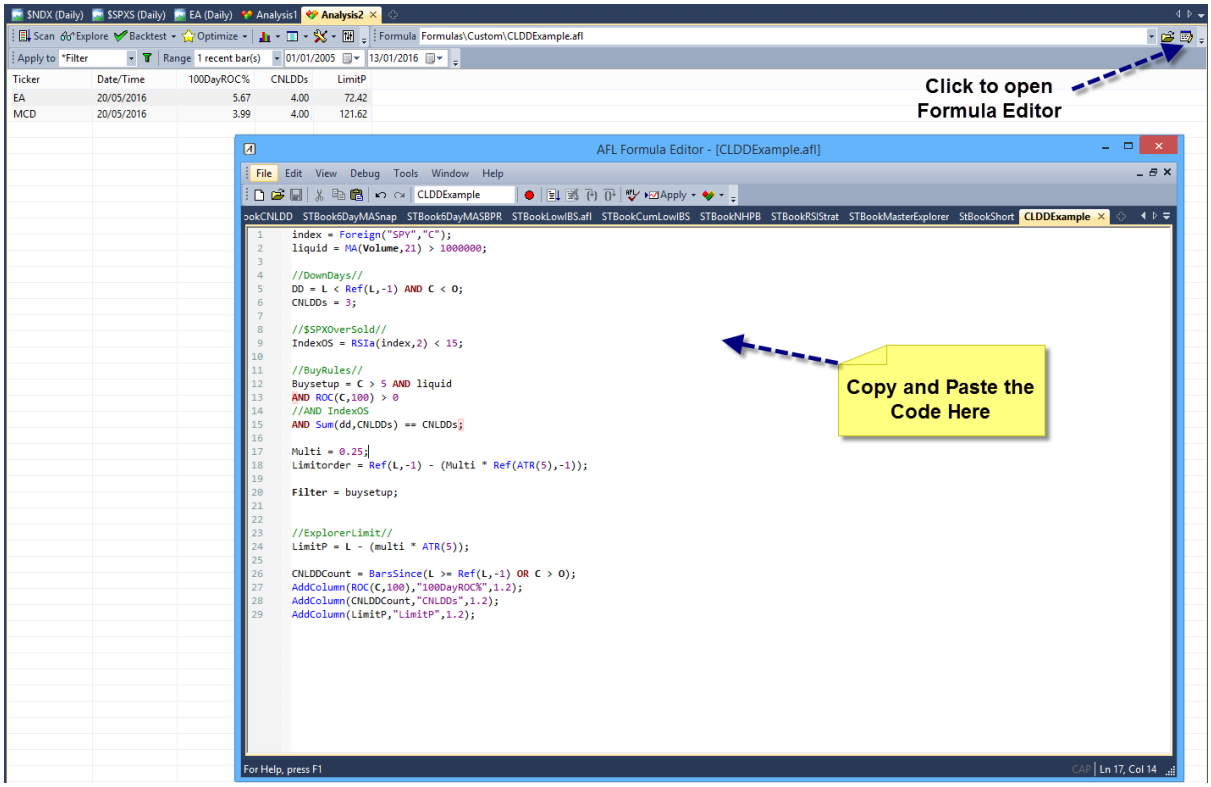
- In the “Range” drop-down menu, select “1 Recent Bar”. This will scan the most recent bar for any signals.



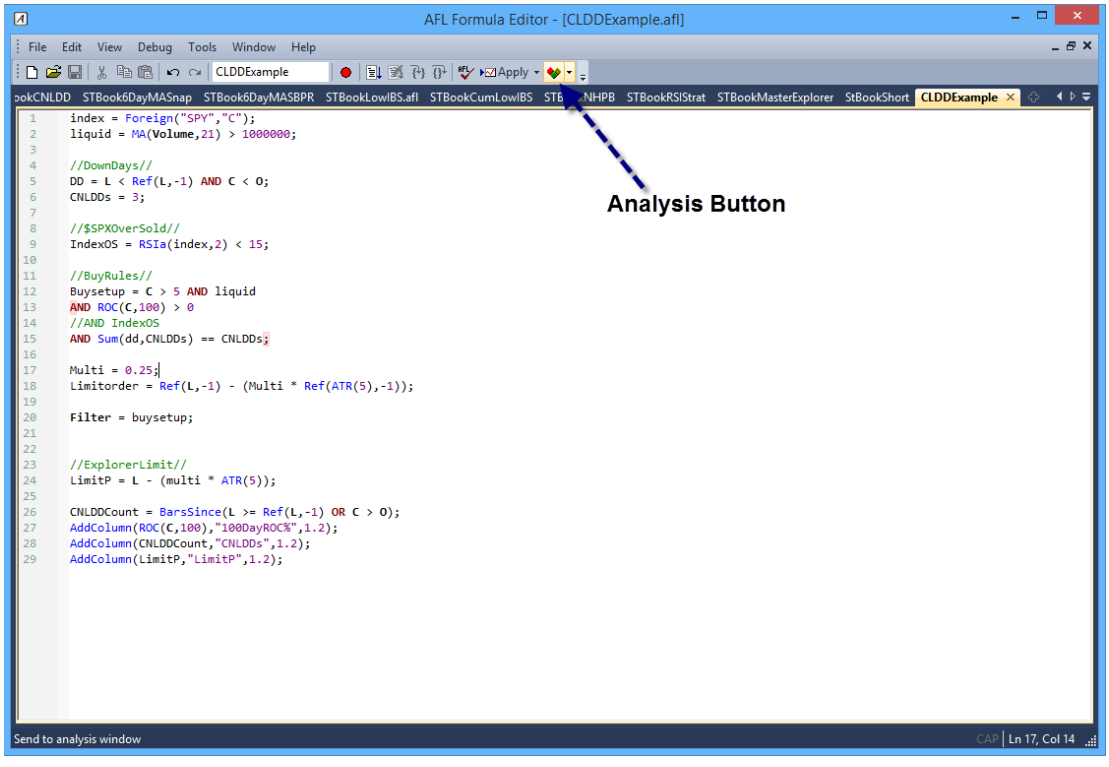
- Click the Formula Editor button and copy and paste the following CNLDD code into the editor:

```
Index = Foreign("SPY","C");

liquid = MA(Volume,21) > 1000000;


//DownDays//

DD = L < Ref(L,-1) AND C < O;

CNLDDs = 3;


//$SPXOverSold//

IndexOS = RSIa(Index,2) < 15;


//BuyRules//

Buysetup = C > 5 AND liquid

AND ROC(C,100) > 0

//AND IndexOS

AND Sum(dd,CNLDDs) == CNLDDs;


Multi = 0.25;

Limitorder = Ref(L,-1) - (Multi * Ref(ATR(5),-1));


Filter = buysetup;


//ExplorerLimit//

LimitP = L - (multi * ATR(5));


CNLDDCount = BarsSince(L >= Ref(L,-1) OR C > O);
```

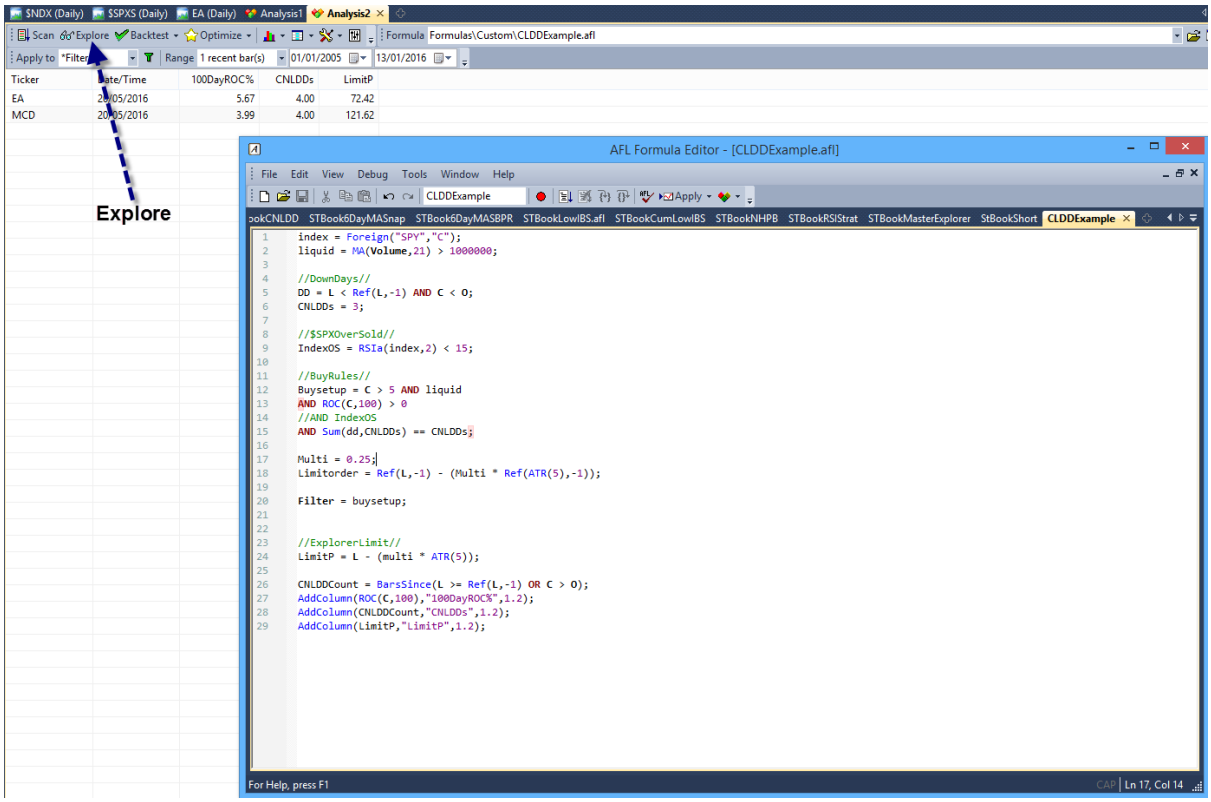
```
AddColumn(ROC(C,100),"100DayROC%",1.2);

AddColumn(CNLDDCount,"CNLDDs",1.2);

AddColumn(LimitP,"LimitP",1.2);
```



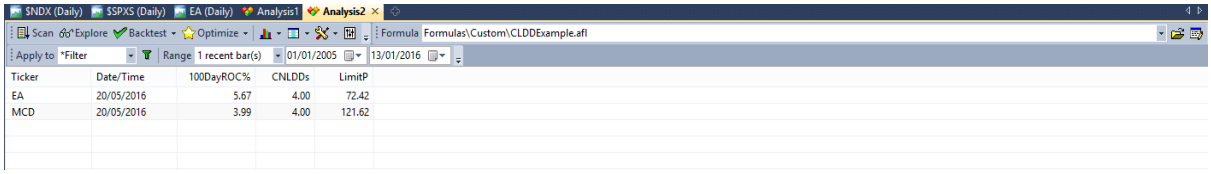
- Click the “Analysis” button.



- Then click “Explore” to run your scanner against the watch-list of stocks that you chose.



If there are any stocks from your list that produced a signal today, the exploration results window will display the ticker symbol, the 100 day ROC%, the number of CNLDD and the limit price that you’d place if using 0.25 * ATR(5) below the low of the signal bar:



Ticker	Date/Time	100DayROC%	CNLDDs	LimitP
EA	20/05/2016	5.67	4.00	72.42
MCD	20/05/2016	3.99	4.00	121.62

You can then click on the ticker symbol to view the charts.

Speeding up your work-flow

If you want to speed up the process of checking for signals and analysing the sector strength of the stocks found by your screener, you can invest in some data such as that provided by NorgatePremium… Click here for a free trial.

Because the data includes the GICS ID for each of the stocks in your database, you are able to write the sector condition rules into your formula using Amibroker’s “Foreign” and “IIF” functions.

In other words, you can stipulate that a stock is only found by your screener if it belongs to a sector that also satisfies your criteria.

Amibroker also allows you to customise the output of the screener which means that one scan can produce multiple columns of data.

For example, I have created an Amibroker explorer which scans for all of the different signals from the book.

The scanner will also tell me whether or not a stock belongs to an oversold sector or whether the sector is outperforming the market.

There is also a column which tells me at what price to place the limit order.

For the following example I have sorted the scanner by order of the best performing stocks (adjusted for volatility) during the past year:

Ticker	Date/Time	InIndex	100DROC%	NLDDs	CNLDD	SnapBackPR	MASnapB	MASnapBackPR	IBS	LowIBS	2DayIBS	CumLowIBS	CumLowIBS	D+W RSI	LimitP	SectorOverSold?	StrongSector?	Rank...	CarMdd
NVDA	20/05/2016	1.00	34.25	0.00	0.00	11.51	0.00	0.00	76.32	0.00	133.96	0.00	0.00	0.00	43.39	No	No	1	4.28
CINF	20/05/2016	1.00	14.34	0.00	0.00	36.51	0.00	0.00	87.18	0.00	172.66	0.00	0.00	0.00	66.89	No	No	2	3.04
CPB	20/05/2016	1.00	13.00	1.00	0.00	100.00	1.00	1.00	14.50	0.00	102.10	0.00	0.00	0.00	59.04	No	Yes	3	2.81
TWC	17/05/2016	1.00	15.31	2.00	0.00	94.84	0.00	1.00	33.49	0.00	50.87	0.00	1.00	0.00	207.23	No	Yes	3	3.36
AWK	20/05/2016	1.00	22.36	0.00	0.00	75.40	0.00	0.00	49.45	0.00	148.66	0.00	0.00	0.00	72.63	No	Yes	4	2.74
TE	20/05/2016	1.00	4.90	0.00	0.00	69.05	0.00	0.00	0.00	0.00	50.00	0.00	0.00	0.00	27.47	No	Yes	6	2.71
PSA	20/05/2016	1.00	1.15	0.00	0.00	89.29	0.00	0.00	71.22	0.00	99.53	0.00	0.00	0.00	248.59	No	No	7	2.66
NOC	20/05/2016	1.00	12.44	0.00	0.00	69.84	0.00	0.00	84.13	0.00	125.87	0.00	0.00	0.00	210.29	No	No	8	2.51
EW	20/05/2016	1.00	24.17	0.00	0.00	86.11	0.00	0.00	22.78	0.00	46.62	0.00	0.00	0.00	98.02	No	No	9	2.44
TSN	20/05/2016	1.00	21.16	1.00	0.00	91.67	0.00	1.00	30.28	0.00	71.55	0.00	0.00	0.00	64.03	No	Yes	10	2.40
SYY	20/05/2016	1.00	18.65	1.00	0.00	95.24	0.00	1.00	11.49	0.00	105.83	0.00	0.00	0.00	48.26	No	Yes	11	2.39
RSG	20/05/2016	1.00	7.71	0.00	0.00	78.17	0.00	0.00	23.21	0.00	106.71	0.00	0.00	0.00	47.39	No	No	12	2.12
MCD	20/05/2016	1.00	3.99	4.00	1.00	98.41	0.00	1.00	14.69	0.00	80.99	0.00	1.00	1.00	121.62	No	Yes	13	2.08
NDAQ	20/05/2016	1.00	8.04	0.00	0.00	40.08	0.00	0.00	58.92	0.00	106.35	0.00	0.00	0.00	62.81	No	No	14	2.03
MKC	20/05/2016	1.00	10.62	0.00	0.00	85.71	0.00	0.00	35.64	0.00	130.23	0.00	0.00	0.00	94.45	No	Yes	15	2.03
NI	20/05/2016	1.00	24.09	0.00	0.00	62.70	0.00	0.00	95.35	0.00	180.46	0.00	0.00	0.00	23.30	No	Yes	16	2.02
BCR	20/05/2016	1.00	16.71	0.00	0.00	55.95	0.00	0.00	45.78	0.00	132.40	0.00	0.00	0.00	217.77	No	No	17	1.99
AMZN	20/05/2016	1.00	4.09	0.00	0.00	61.51	0.00	0.00	38.67	0.00	129.73	0.00	0.00	0.00	696.52	No	Yes	18	1.97
FISV	20/05/2016	1.00	9.98	0.00	0.00	73.41	0.00	0.00	46.77	0.00	106.48	0.00	0.00	0.00	101.46	No	No	19	1.94
EXR	20/05/2016	1.00	2.93	0.00	0.00	77.38	0.00	0.00	98.84	0.00	118.04	0.00	0.00	0.00	88.85	No	No	20	1.93
LMT	20/05/2016	1.00	10.75	0.00	0.00	74.21	0.00	0.00	87.96	0.00	121.50	0.00	0.00	0.00	237.64	No	No	21	1.92
GAS	20/05/2016	1.00	5.05	0.00	0.00	63.10	0.00	0.00	28.57	0.00	59.01	0.00	0.00	0.00	65.51	No	Yes	22	1.91
GOOG	20/05/2016	1.00	-6.92	0.00	0.00	50.00	0.00	0.00	65.58	0.00	103.84	0.00	0.00	0.00	697.50	No	No	23	1.90
STZ	20/05/2016	1.00	8.06	1.00	0.00	95.63	0.00	1.00	11.32	0.00	107.96	0.00	0.00	0.00	152.97	No	Yes	24	1.90
RAI	20/05/2016	1.00	8.07	0.00	0.00	84.13	0.00	0.00	16.00	0.00	109.75	0.00	0.00	0.00	49.33	No	Yes	25	1.89
MO	20/05/2016	1.00	9.03	0.00	0.00	88.89	0.00	0.00	21.28	0.00	117.57	0.00	0.00	0.00	62.51	No	Yes	26	1.83
CLX	20/05/2016	1.00	1.83	0.00	0.00	86.11	0.00	0.00	18.23	0.00	104.34	0.00	0.00	0.00	127.89	No	Yes	27	1.77
TAP	20/05/2016	1.00	4.00	0.00	0.00	81.75	0.00	0.00	21.92	0.00	116.82	0.00	0.00	0.00	96.00	No	Yes	28	1.76
PGR	20/05/2016	1.00	6.21	0.00	0.00	45.63	0.00	0.00	75.00	0.00	154.37	0.00	0.00	0.00	32.51	No	No	29	1.75
K	20/05/2016	1.00	2.65	1.00	0.00	96.83	0.00	1.00	17.12	0.00	101.45	0.00	0.00	0.00	73.81	No	Yes	30	1.70
FB	20/05/2016	1.00	10.78	0.00	0.00	68.65	0.00	0.00	38.46	0.00	96.23	0.00	0.00	0.00	116.49	No	No	31	1.70
EQIX	20/05/2016	1.00	15.30	0.00	0.00	57.54	0.00	0.00	77.80	0.00	140.41	0.00	0.00	0.00	336.68	No	No	32	1.66
O	20/05/2016	1.00	16.35	1.00	0.00	97.62	0.00	1.00	86.14	0.00	169.47	0.00	0.00	0.00	57.93	No	No	33	1.65
CVC	20/05/2016	1.00	8.76	0.00	0.00	38.10	0.00	0.00	73.58	0.00	105.15	0.00	0.00	0.00	34.39	No	Yes	34	1.61
SCG	20/05/2016	1.00	12.75	0.00	0.00	82.14	0.00	0.00	61.45	0.00	159.78	0.00	0.00	0.00	67.57	No	Yes	35	1.59
RTN	20/05/2016	1.00	3.63	0.00	0.00	74.60	0.00	0.00	57.65	0.00	103.50	0.00	0.00	0.00	128.41	No	No	36	1.57
XEL	20/05/2016	1.00	12.92	0.00	0.00	84.13	0.00	0.00	54.72	0.00	153.51	0.00	0.00	0.00	40.00	No	Yes	37	1.56
GOOGL	20/05/2016	1.00	-7.74	0.00	0.00	58.73	0.00	0.00	52.80	0.00	101.89	0.00	0.00	0.00	711.95	No	No	38	1.55
WM	20/05/2016	1.00	13.47	0.00	0.00	71.43	0.00	0.00	25.00	0.00	103.52	0.00	0.00	0.00	60.38	No	No	39	1.53
ARG	20/05/2016	1.00	3.71	0.00	0.00	59.52	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	142.92	No	No	40	1.53
PM	20/05/2016	1.00	11.82	0.00	0.00	92.06	0.00	1.00	24.42	0.00	107.57	0.00	0.00	0.00	97.47	No	Yes	41	1.50
DPS	20/05/2016	1.00	-2.75	1.00	0.00	91.67	0.00	0.00	4.55	0.00	90.26	0.00	0.00	0.00	90.80	No	Yes	42	1.49
NEE	20/05/2016	1.00	15.62	0.00	0.00	66.27	0.00	0.00	96.69	0.00	194.64	0.00	0.00	0.00	117.36	No	Yes	43	1.46

The above exploration for Amibroker (using Norgate Premium data) takes about 10 seconds to scan the entire database of S&P500 stocks and will identify all of the signals which have been produced, as well as the strength of the individual sectors.

Over the course of a year, the time saved avoiding unnecessary analysis more than compensates for the cost of the software and data.

If any of this is confusing, you are welcome to join the Flagship trading course whereby I explain how to create your own Amibroker explorations with customisable output, as well as programming individual formulas upon request.

Final Thoughts

I decided to write this book because I have a large number of clients who are often sending me trading strategy ideas that they want programmed and that they expect to produce double digit returns each month.

They are invariably left disappointed!

It's sad but true that most online trading courses, books and seminars tend to overstate the amount of money that can be made if you have access to some special strategy or another. This leads many amateur or hobbyist traders to believe that the stock market offers a chance to trade for a living or get rich quick…

Trust me; you're far more likely to get poor quick if your goal is to make 20% on your money each month.

As an antidote, the strategies in this book have hopefully provided you with a more realistic expectation of the possible risks and returns that you might experience if trading short-term or swing trading strategies in the stock market.

Although the strategies in this book have been shown to be profitable, there is no guarantee that they will continue to be in the future. Market conditions change and in doing so might render a previously profitable strategy obsolete.

Furthermore, I have not assumed any slippage during the tests.

As with all trading strategy ideas that you read about, you should therefore verify and test in a live market before allocating a strategy any real funds.

I have also kept the strategies in this book as simple as possible. The reason that I included a small chapter which showed you how to scan for patterns is that I wanted you to be able to modify the strategies and test different filters, exit strategies, combinations of patterns and position-sizing methods.

With a little bit of research you will find that each of the strategies which I have written about can (and should) be improved upon.

To help you keep a record of how well these strategies perform going forward, I have also created an excel trade journal which simplifies the task of record keeping.

To purchase the spreadsheet and the formulas for all of the strategies and indicators that I've written about in this book (as well receiving lots of further material and programming assistance) you can register for the flagship trading course here.

Thank-You for Reading "The Honest Guide to Short-Term Stock Trading Strategies"

I would like to take this opportunity to thank you for reading my book. As always, I kindly invite you to get in touch with me regarding its contents.

Furthermore, if you are interested in learning how to program any of the strategies from this book (or better still if you would like assistance with programming your own strategies) then please join the Trading Course Members area on my website.

Please also send any questions that you might have to llewelynjames@hotmail.co.uk and I'll be glad to get back to you.

Thanks again,

Llewelyn